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28 JAN 1970

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OFFICIAL PUBLICATION OF THE
MEDICAL SOCIETY OF VIRGINIA



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Worning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease. Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks.

Adverse Reactions: Rarely severe enough to require discontinuation of therapy, unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathomimetic agents, it may occasionally cause CNS effects such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic cardiovascular effects reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. Allergic phenomena reported include such conditions as rash, urticaria, ecchymosis, and erythema. Gastrointestinal effects such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria.

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PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF VIRGINIA

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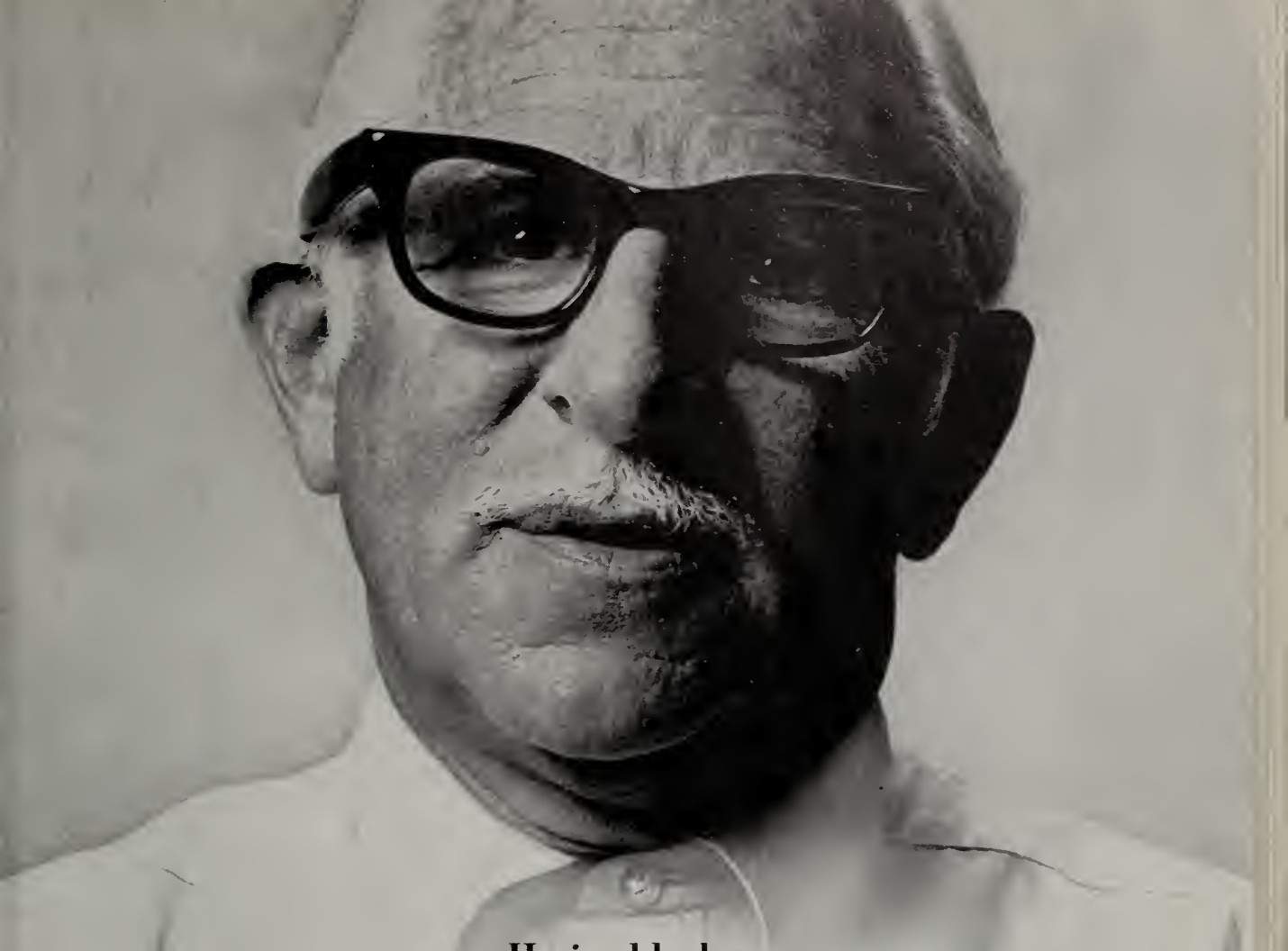
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He is elderly.
He is on corticosteroids.
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he may be a candidate for

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Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

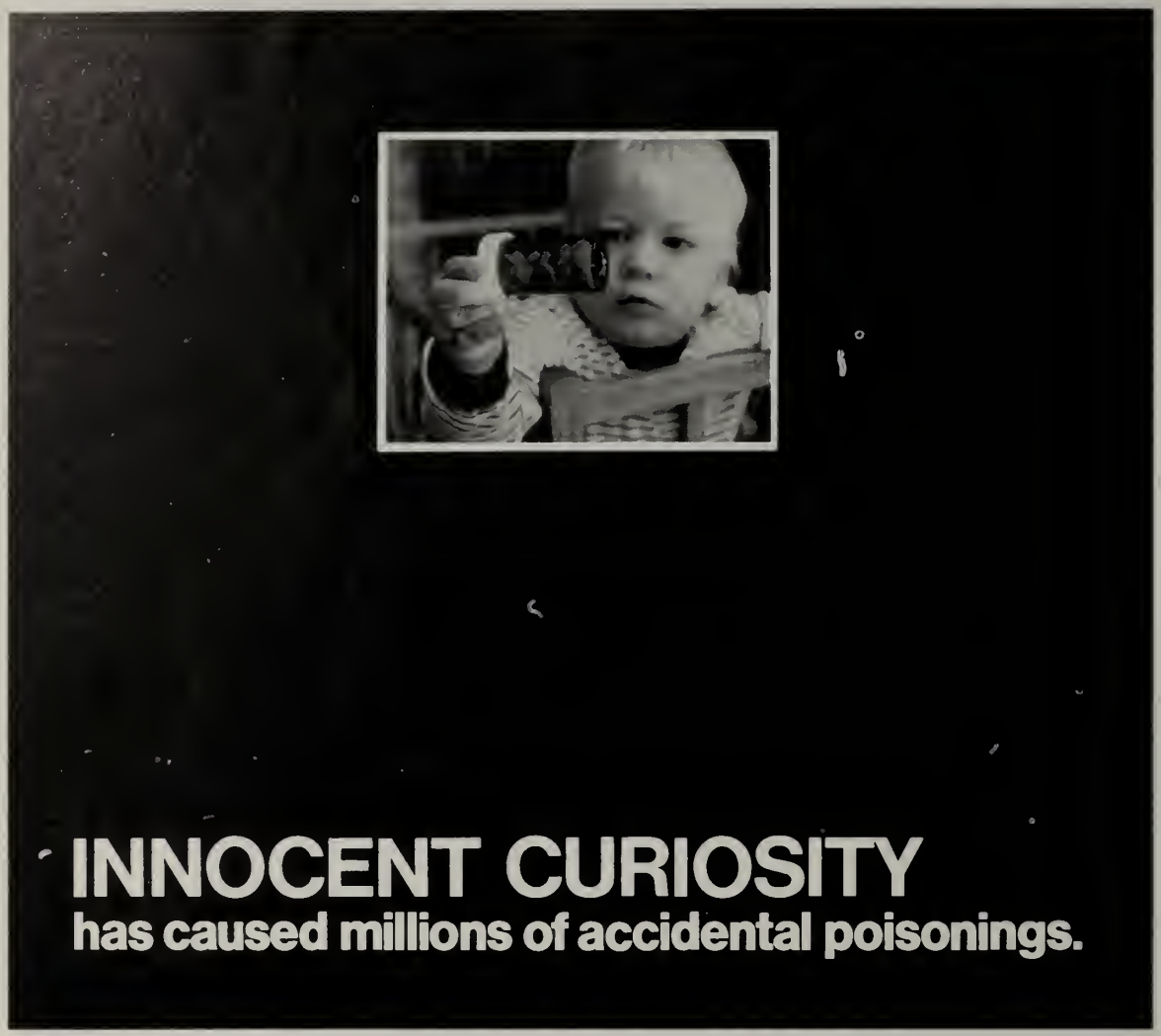
Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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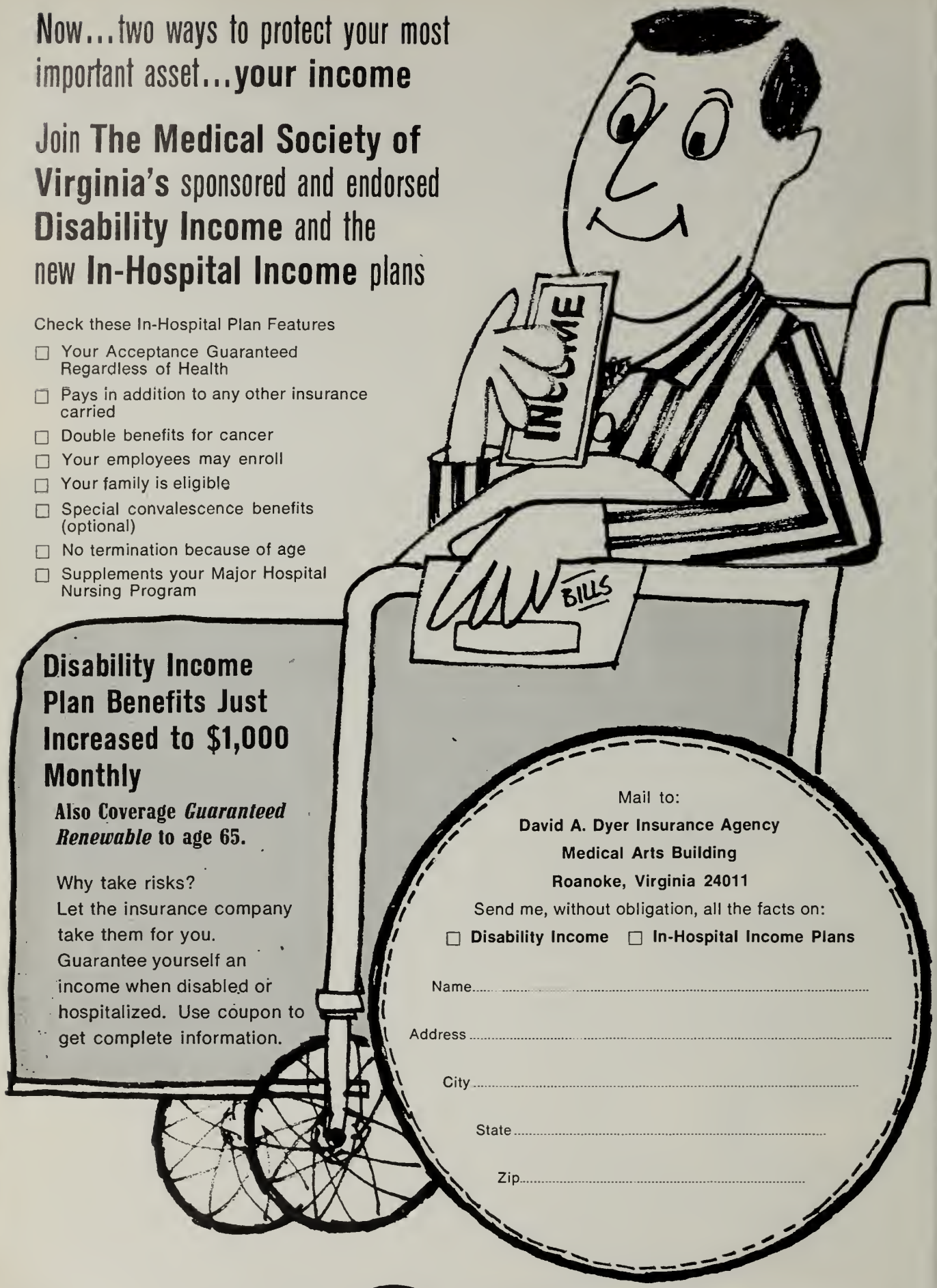
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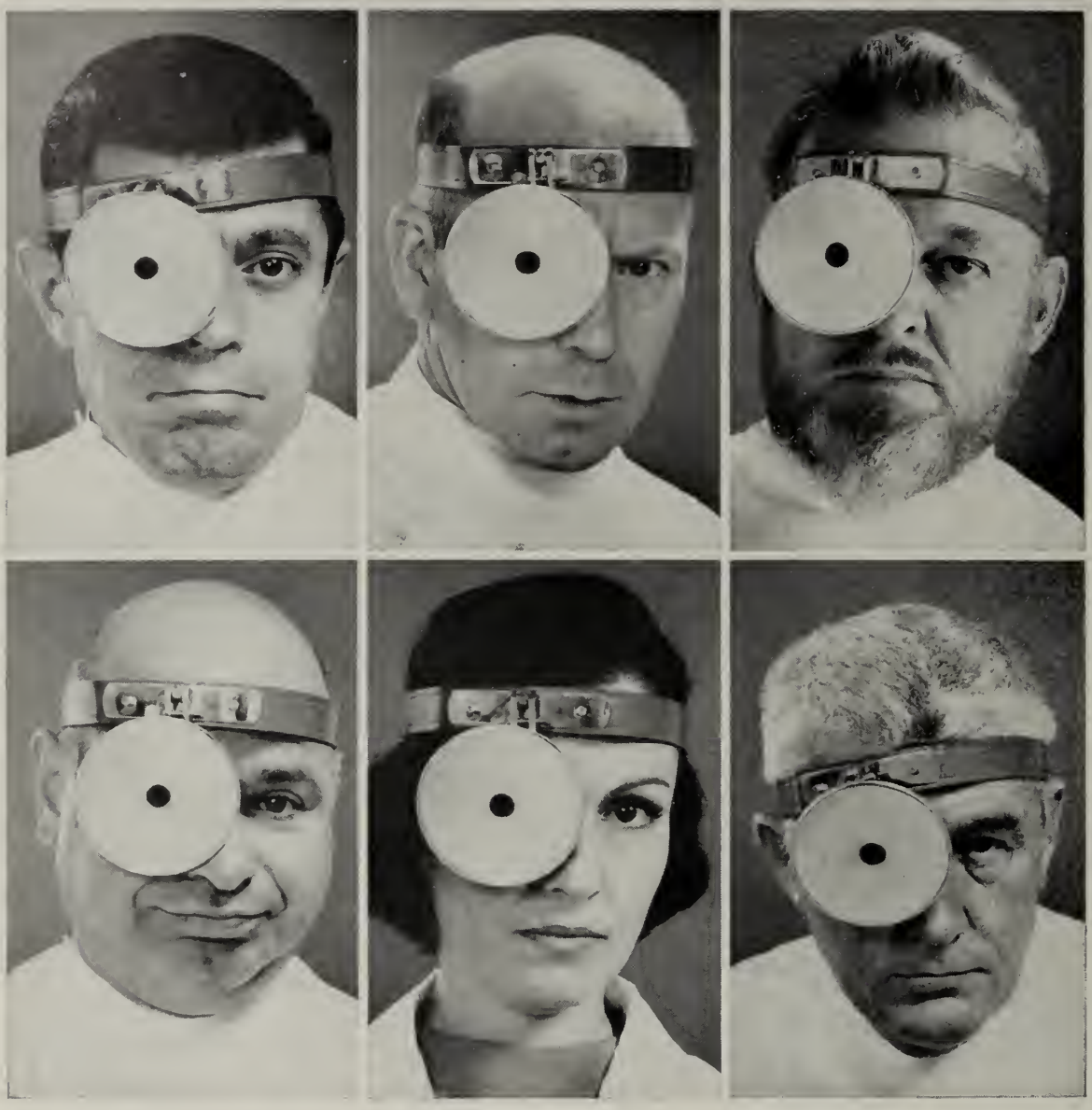
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Just look at them and you can see how much they have in common. Besides, they all go through pretty much the same training, and pass the same kinds of tests, and measure up to the same sort of standards. Therefore, all otolaryngologists are alike. Right?

Wrong! But that's no more preposterous than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

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Contraindications: Edema, danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of the alka formulation are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer, perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy and in patients with thyroid disease.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. Patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions. The more common are nausea and edema. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative derma-

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Serious side effects can occur. Select patients carefully (particularly the elderly) and follow them closely in line with the drug's precautions, warnings and contraindications. Read the prescribing information. It's summarized below.

is, Stevens-Johnson syndrome, ell's syndrome (toxic necrotizing idermolysis), or a generalized llergic reaction similar to serum ckness may occur and require ermanent withdrawal of medication. Agranulocytosis can occur uddenly in spite of regular, repeated ormal white counts. Stomatitis nd, rarely, salivary gland enlargeent may require cessation of treatent. Such patients should not eceive subsequent courses of the rug. Vomiting, vertigo and languor ay occur. Leukemia and leukemoid eactions have been reported. While ot definitely attributable to the rug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria, glomerulonephritis and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Rheumatoid Arthritis: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily. In selecting the appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response. (B)46-070-C
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Contraindications: History of sensitivity to meprobamate.

Important Precautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep; reduction of blood pressure, pulse and respiratory rates to basal levels; and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® [strip pack], Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

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FACT & LEGEND



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BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

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ecautions: Nonsusceptible organisms may overgrow; treat superinfection appropriately. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).
Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity reactions*—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage. Upon adverse reaction, stop medication and treat appropriately.

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Guest Editorial....

A Psychiatry Resident Looks at Causation in Medicine

AS PROFESSOR MARGENAU points out in *The Nature of Physical Reality*, causality might best be described in two ways. There can be a "partial cause" which is a thing or event, or there can be a "total cause" which is always a stage in a process.

The purpose of this article is to discuss some partial causes, the type we usually concern ourselves with in medicine, and to comment on some of their interactions.

The concept of "psychosomatic" medicine is a fascinating one because of its breadth and also because of the ease with which its limits are misunderstood. Immediately the statement must be made that we are plunging into the vertical areas of causality. For example, there can be molecular bases, or causes, for diseases and there can be electrochemical causes. Both of these can be in themselves thought of as inseparable partial causes on a horizontal level. The functionalist claims priority for the mind as the "cause" of disease, the organically oriented colleague negates the mind in his research for causality. What I strive for here is a simple attempt at some vertical connection.

The concept of a monistic approach after the fact seems so well established that I doubt if any worthwhile physician ever questioned it. It is clear that once the appendix has ruptured or the compulsion cemented, both the mind and the body participate in the anguish and the healing. The confusion, to some, has always been related to that period prior to the detectable injury. Here one can see at least three clearly defined partial causes.

The first types of causation is by pure physical event. A favorite example here is the wartime soldier upon whom a bomb, or other missile, descends. There are multiple other examples possible in this realm, all of which have in common the finding that in no manner can the injured's mental operations prior to the injury be linked with the injury. Obviously those non-accidental accidents with which we are all familiar must be carefully excluded here. These then are the strict organic diseases, and their number is small.

The second type of causation seems equally clear. Here my example of

choice is the phobia. Regardless of how one might try, it seems unimaginable to link the cat phobia, shall we say, to other than mental, that is psychological, causes. This is not to neglect the obvious fact that to be afraid of a cat one must have memory of a cat, and that memory must be in some way organically based. This sort of approach is immediately hopeless however since mental causes, of my description, can only occur in the presence of an organ that can support "mind". Yet we know that when one sees "cat" one also sees "fur", and "eyes", and "small size", and "four feet", and all the surrounding environment of the cat, so that to focus the "illness" on the cat and not on any of these other stimuli must indeed be a "mental" manipulation of some sort. These then are the functional diseases, and though they seem greater in frequency than the organic disease, they too are small in number.

The third type of partial causation is the mixed type, and the mixture exists because we now enter into vertical views of causes. Here clearly lie the great majority of human disorders. Angina, many infections, and schizophrenia are all here, as well as a host of others. The importance of dwelling on this category lies both in theory and practice. In theory because any research lacking this dimension is doomed to shallow results, or worse. And in practice, without this concept, our teaching of ourselves and our colleagues will be greatly lacking. It seems a fact almost to the point of cliche that the mature internist becomes more a philosopher with each successive year of practice while the eager medical student assaults his patients only with the limited weapons of chemistry and physics. The need for implementing the fact of a mixed causality is therefore the hope that the student can be taught earlier how to be a philosopher, a practitioner of not only science, and that the internist will not abandon his laboratory for his art.

IGOR MAGIER, M.D.

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Disorders of Hearing as Neurological Symptoms

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Loss of hearing may be an early sign of serious neurological disease. It should be watched for and, when found, appropriate evaluation should be carried out.

MILD DEGREES OF DEAFNESS and dizziness are very common symptoms, especially in patients of middle and later years. Being so common, they are often overlooked or dismissed as normal concomitants of aging unless they are very troublesome or associated with other symptoms. At least part of this phenomenon is due to the strong tendency of patients to adapt to deficits in hearing and vestibular functions. In very slowly progressive disorders, adaptation may keep pace with an increasing deficit, and the patient may be unaware of it until the process is far advanced. It is fairly common, for example, for acoustic neuromas to remain unsuspected until they produce other cranial nerve deficits or increased intracranial pressure. Similarly, in cases of chronic exposure to loud noise, the deafness may progress to the point of severe handicap before discovery. A minor speech impediment or apparent lack of attention may be the examiner's only clues to an undetected partial deafness.

It is, obviously, not practical to include a full battery of audiometric and vestibular tests in every routine examination. However, simple screening procedures are available, and include rubbing and clicking sounds made with the fingers, tuning-fork testing, and testing with spoken and whispered speech. Nystagmus, dysequilibrium and instability of gait give evidence of vestibular impairment. Such simple observations will usually determine whether more elaborate testing is needed.

Anatomy and Physiology

As with most neural systems, an application of the anatomy is of great help to the clinician in determining the site of lesions in the auditory and vestibular pathways, and thereby the probable cause. Because of the intimate structural and functional relationships of the two systems, they must be to some extent considered together.

Developmentally, the vestibular system is very old, being present throughout the vertebrate series. Audition appears to have developed later as an outgrowth of the older system. In view of our minimal awareness of vestibular sensation, it is surprising how much of brain is devoted to the system—including large portions of the brainstem and cerebellum. Much of its function is at a reflex level, being automatic and unconscious.

In all parts of the audio-vestibular system the basic sensory element is the hair cell—a modified ciliated epithelial cell. The labyrinth is mechanically arranged so that appropriate stimuli (sound or accelerations) bend the cilia and a signal is transmitted centrally via the cochlear or vestibular nerve. Each nerve has its cell bodies in a peripheral ganglion and the first order neuron enters the brainstem.

Cochlear nerve fibers enter the dorsal and ventral cochlear nuclei. Almost immediately upon entering the neuraxis the auditory paths diverge (Fig. 1). Second order fibers from either side are distributed to

higher auditory centers of both sides of the brain. This divergence and widespread bilateral distribution allows for a large amount of binaural interaction, and undoubtedly contributes to our remarkable capacity for localization of sound sources. It also allows a great deal of redundancy, and accounts for the striking lack of auditory deficit produced when central nervous system lesions involve the auditory pathways. As in the case of the vestibular system, the auditory fibers also contribute to a number of reflexes but a major portion of this system ultimately is distributed to thalamus and cerebral cortex and, therefore, attain consciousness.

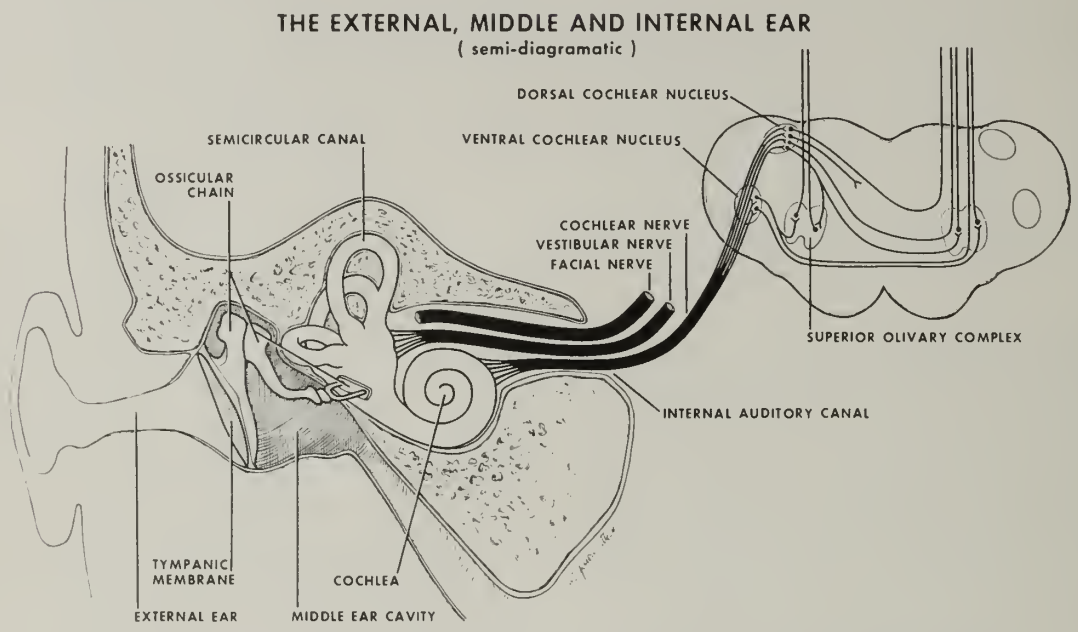


Fig. 1. Diagram of principle ear structures and their connections. Note that facial, vestibular and cochlear nerves share the internal auditory canal. To the right is represented the brainstem in cross-section. Note the dispersion of the central auditory pathways.

Much of our modern understanding of the dynamics of hearing is owed to the extensive studies of von Békésy.[2] Sound in air is transmitted as waves of compressions and rarefaction, the frequency of which determines pitch. The pressure waves vibrate the tympanic membrane which is coupled through the ossicular chain to the fluid medium of the cochlea. The basilar membrane of the cochlea is set into motion in vibratory waves which travel toward the apex and stimulate hair cells as they pass. Because of the mechanical arrangement of the cochlea, energies of specific frequencies are mainly absorbed at specific locations along the basilar membrane—low tones traveling farther toward the apex, and high tones being absorbed in the basal turns. However, vibrations of all frequencies pass through the basal turns and stimulate the hair cells there.

The inner ears of most mammals are remarkably similar in structure. The physical dimensions largely determine the range of frequency sensitivity—in man roughly ten octaves between 20 and 20,000 cycles per second. Sound pressure levels are measured on a logarithmic scale in decibels (db) with reference to a standard—commonly .0002 dynes/cm.^{2} This level is approximately equivalent to the noise of a mosquito. Ordinary conversation runs about 60 db higher and jet aircraft about 60 db above conversation. To obtain an impression of the tremendous dynamic range of the ear, consider that mosquitoes and airplanes are perform-

ing the same operation—compressing air to produce thrust, lift and noise. In both cases, the energies expended in noise are roughly proportional to those expended in flight.

In both auditory and vestibular systems, lesions at several sites along the line of transmission can produce deficits in function. The syndromes of the various locations are fairly characteristic, if we examine them carefully. It is these characteristics that form the basis of the differentiating tests in use and allow us to make an accurate diagnosis.

Because it senses changes in outside air pressure, audition requires good conduction from the outside through the external canal, eardrum, and middle ear ossicles into the oval window of the cochlea. In contrast, the vestibular apparatus is entirely internal. Because of this, and the marked redundancy of the central auditory fibers, pure auditory defects are likely to be due to peripheral lesions, while vestibular disorders without hearing loss are more apt to have their causative lesions in the central nervous system. Lesions within the petrous bone usually cause deficits of both systems because of their close proximity there.

Clinical Aspects

Deafness is traditionally classified as conductive or perceptive. The conductive disorders are due to interferences with transmission of the pressure waves through the external and middle ears into the cochlea. Perceptive deafness is now more usually called sensori-neural deafness and is due to involvement of the cochlea or cochlear nerve. Attempts to differentiate these have resulted in the classical Rinné and Weber tests, which compare air and bone conduction, and test for the phenomenon of lateralization. Although audiology has come a long way since their invention, these tests are still valid.

Conductive Lesions

Normally, the external and middle ear structures act as a very efficient matching device for transmitting air-borne sound waves to the fluid medium of the cochlea. However, sound waves also set up vibrations in everything within their environment, including the skull of the listener. At levels 40 db or more above the normal perception threshold, these skull vibrations themselves become audible, presumably by driving the cochlea directly rather than via the middle ear ossicles. Such bone conduction of sound can be demonstrated by pressing the base of a vibrating tuning-fork against some part of the head. This increases the transmission of vibrations to the cochlea but still cannot match the efficiency of a normally functioning conductive pathway. In Rinné's Test a tuning-fork is used in this manner to compare the perception of air-conducted with bone-conducted sound. If the bone-conducted sound is better perceived than that in air, it indicates a disorder of the conductive pathway but suggests the sensing and neural elements of the inner ear are relatively normal. In cases of conductive deafness, if the tuning fork is placed in the midline of the skull, the sound seems to be coming from the deaf ear (Weber's Test). Several explanations have been proposed but the reason for this apparent lateralization remains poorly understood. Some common causes of conductive deafness are obstruction of the ear canal, damage to the tympanic membrane, fluid accumulation in the middle ear, damage to the ossicles, and otosclerosis. Such disorders usually do not cause more than 40 db of hearing loss because of the audibility of skull vibrations above that level. Advanced otosclerosis may cause, in addition to conductive loss, some sensori-neural loss as well. Conductive deafness is usually not of neurologic significance but must be differentiated from neural causes.

Cochlear Lesions

All sensori-neural lesions cause impairment of perception of bone-conducted as

well as air-conducted sounds. Of these, lesions of the cochlea produce a syndrome of deafness, noise intolerance and poor speech discrimination. The single most characteristic feature of cochlear lesions is the presence of loudness recruitment. In this, quiet sound are poorly heard while louder sounds may be normally or supernormally perceived. This tends to compress the effective range of sensitivity and contributes to the poor speech discrimination. (The lowest amplitude speech sounds are the beginnings and endings of syllables which contain most of the information.) Intolerance of loud noises and impaired speech perception, which deteriorate still more in noisy environments, are historical clues suggestive of recruitment. In contrast, conductive deafness often improves in noisy places, as the noise is attenuated along with the information and everyone tends to talk louder.

The classical audiometric test for recruitment is that of loudness balancing in which the patient is asked to compare tones presented alternately to the two ears and adjust them to equal loudness (Fig. 2). Unfortunately, this test is of limited value as it requires one normal ear. A number of other tests give evidence for the same phenomenon, although the exact mechanism has been disputed. These include: (1) Békésy audiometry, which gives a characteristic curve, and (2) Tests of difference limen, of which there are a number. Difference limen is that increment of sound level which is perceived as just noticeably louder. Normally this requires an increase of 3 db or more. In patients with recruitment, loud sounds not only seem relatively louder, but

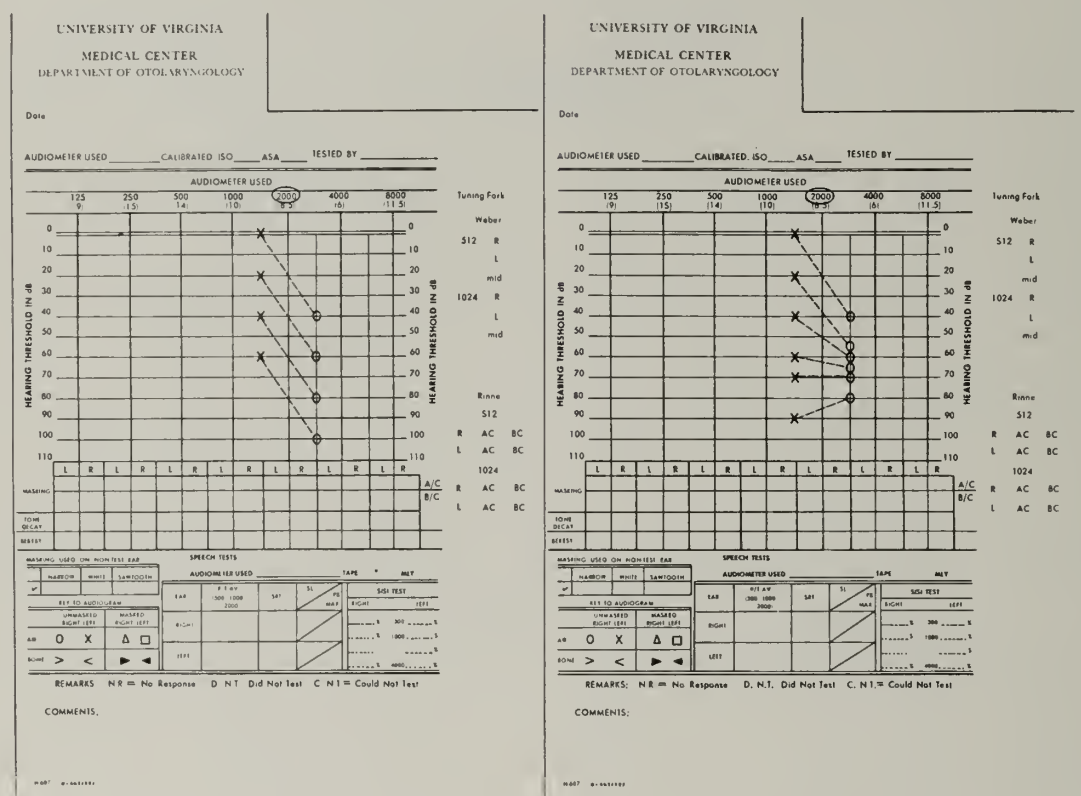


Fig. 2. Loudness balancing tests at a frequency of 2000 cps. To the left there is seen a 40 db hearing loss in the right ear, which is the same at all intensities tested. To the right is a similar test with recruitment. At threshold, the right ear has a 40 db hearing loss, but at 70 db above threshold the tones are perceived as equal in intensity.

small increases are more noticeable, and increases of 1 db are often perceived. Of the tests for difference limen, the Short Increment Sensitivity Index (SISI Test) is the easiest to administer and gives the most reproducible results.[5] A periodic 1 db increase is superimposed on a steady tone and the number of increases perceived by the subject are noted. Normal people recognize very few of these small increments but patients with recruitment perceive many more than normal.

Cochlear deafness may be at all frequencies, or, because of the distribution of frequencies along the basilar membrane, may be very specific. Presbycusis is characteristically a high tone deafness. Chronic loud noise exposure typically produces a "notch" of deafness at three to four thousand cycles per second. Toxins, vascular lesions, and Meniere's disease tend to produce "wide band" deafness at all frequencies. This latter group also commonly causes associated disorders of the vestibular system. Toxins, such as quinine and dihydrostreptomycin, being blood-borne, typically produce bilateral lesions. Their effects are usually heralded by marked tinnitus and permanent damage can often be averted by heeding this warning.

Nerve Lesion

From the neurologist's point of view, the so-called retrocochlear lesion constitutes one of the most important forms of deafness. The typical retrocochlear syndrome is a sensorineural deafness with little or no recruitment. Implicit in this diagnosis is that the disturbance is central to the cochlea, but, causing observable deafness, it lies peripheral to the brainstem. Among the common causes are acoustic neuromas, other cerebello-pontine angle tumors, occlusive vascular disease and meningitis. In meningitis, deafness is rarely a presenting symptom but may be a permanent residual deficit after successful treatment. In retrocochlear lesions, the hearing loss tends to be worse for high tones, with impaired speech discrimination. Tinnitus is usual. Associated vestibular disturbances are common (almost invariable with eighth nerve tumors) but may be completely compensated and asymptomatic until late in the course of the illness. As neoplastic lesions enlarge, they usually produce signs referable to other cranial nerves, the cerebellum, or the ascending and descending tracts of the brainstem. Obstruction of the cerebrospinal fluid pathways may cause greatly increased intracranial pressure, with headache, vomiting and papilledema. Hopefully, however, the diagnosis can be made early, before these ominous signs develop.

The Békésy audiometer has been of particular value in the location of lesions within the auditory system.[1,6] This device automatically plots a graph which indicates hearing threshold at all frequencies, and difference limen. A separate plot for continuous and interrupted tones is usually made. The typical pattern seen in retrocochlear lesions is called Type III. In this the threshold for interrupted tones follows that of the standard pure tone audiogram. The continuous tone threshold begins to deteriorate at low frequencies and becomes progressively worse at higher frequencies. There is usually little evidence of the narrowed difference limen characteristic of cochlear lesions (Fig. 3).

Of the other forms of deafness, the retrocochlear syndrome is most apt to be confused with presbycusis, the deafness of advancing age, and herein lies the obvious danger. Both tend to have progressive high-tone sensorineural hearing loss with tinnitus and poor speech discrimination. The subtle signs of lack of recruitment and vestibular disturbance are easy to overlook, especially if the latter is asymptomatic, and detectable only on caloric testing. Asymmetrical deafness should always be a warning, even though it is common in other syndromes as well. A careful neurologic examination will reveal the involvement of other cranial

nerves, cerebellum, or brainstem structures, but the absence of these findings does not exclude the diagnosis of tumor. X-ray of the skull may show erosion of the petrous portion of the temporal bone, but small tumors may be difficult to detect by this means. The spinal fluid protein content is usually elevated in cases of tumor, but lumbar puncture is extremely hazardous if the intracranial pressure is elevated due to tumor in this location. Careful examination of the optic fundi and the skull x-rays for

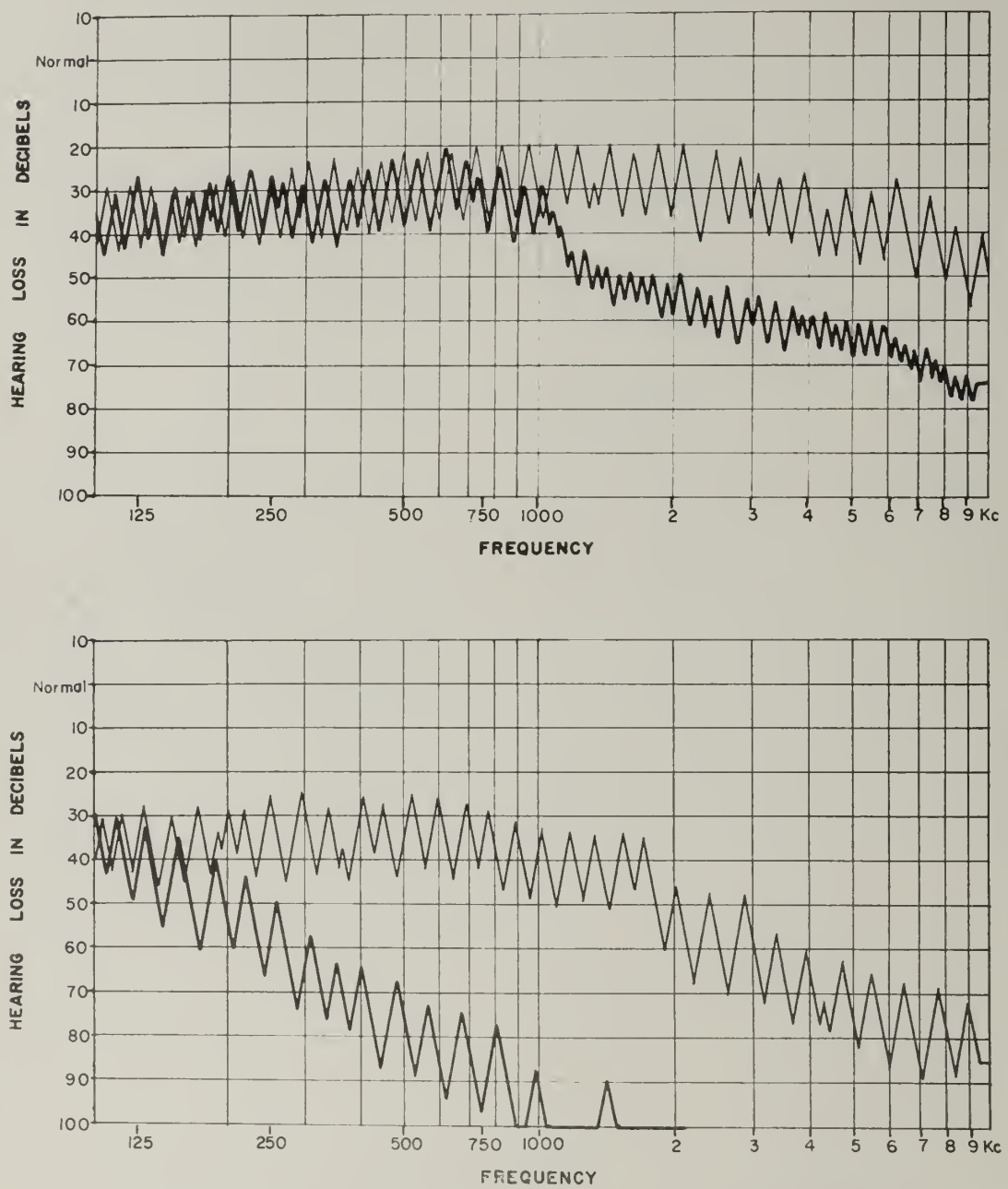


Fig. 3. Results of Békésy audiometry. The upper chart represents a cochlear deafness. There is a 30-40 db loss for interrupted tones (lighter trace), but a continuous tone (darker trace) is progressively less well-perceived at higher frequencies. Note the narrowing of the excursions of the pen, seen when recruitment is present. The lower chart represents a retrocochlear syndrome. Continuous tone perception begins to deteriorate at low frequencies and becomes progressively worse. There is no narrowing of the difference limen—see Text.

signs of increased intracranial pressure may prevent disaster. Small acoustic nerve tumors may be identified by means of positive contrast cisternography, in which the internal auditory canal can be filled with radiopaque contrast medium outlining the lesion.

Recently a "team" approach to the problem of surgical removal of tumors of the cerebello-pontine angle has been introduced, as summarized by Glasscock in a current monograph on the subject.[4] This utilizes the skills of a neurosurgeon and an otolaryngologist and consists of a system of transtemporal bone operations based on the size and location of the tumors. This method was introduced to take advantage of our improved ability to make an early, positive diagnosis, and the results reported by the originators have been encouraging, to date. However, recent modifications of the more traditional suboccipital approach have also improved the operative morbidity, as noted by Roberts, et al.[8] The important point is that early diagnosis will simplify whatever operative procedure is used, and yield a better final result.

Central Nervous System Lesions

One of the most frustrating problems facing audiologists has been that of diagnosing central nervous system (CNS) lesions involving the auditory pathways. Experimental studies have shown that CNS lesions impair such functions as acquisition of auditory conditioned responses and the ability to discriminate some complex sounds. Patients with CNS lesions sometimes complain of auditory distortions but usual audiometric methods fail to show impairment of acuity. Satisfactory auditory tests to demonstrate these disorders could greatly enhance our knowledge of central auditory mechanisms, in addition to localizing the lesion with minimal inconvenience to the patient. Special audiometric techniques which reduce the redundancy of information are being used for this.[3,7] The most satisfactory tests so far involve discrimination of speech which has been distorted. Distortions may be in the time domain (as by interruptions or alternating presentation to the two ears) or in the frequency domain (as by filtering out high or low frequencies). Evidence to date suggests that lesions of the pons and lower midbrain impair discrimination of time-distorted speech, while higher level lesions tend to impair discrimination of frequency-distorted speech. The instrumentation necessary for these procedures is quite sophisticated, requires precise calibration, and is beyond the scope of most clinical laboratories at the present time.

From a neurological point of view, CNS lesions are almost invariably accompanied by other deficits which give important clues as to their location. Vestibular dysfunction is a very common accompaniment of brainstem lesions, as are other cranial nerve deficits. Brainstem lesions, in fact, usually afford extremely precise neurological localization because of the great packing-density of neural elements there. Diencephalic and cerebral lesions offer less precise clinical localization, but are accessible to other methods of diagnosis, as EEG, radioisotope scanning and contrast x-ray studies.

In the past decade, an interest has developed in the use of evoked responses in audiology. This technique is based on the fact that sensory stimuli of many types cause localized, temporary alterations in the brain wave pattern as recorded with the electroencephalograph. This, then, gives another means of assessing hearing, being an objective measurement of threshold and not requiring the cooperation of the patient. In addition to being a valuable investigative tool, the method has proven clinically useful in evaluation of hearing in infants and small children, mentally retarded patients, those with certain neurological disorders, and in cases of functional deafness and suspected malingering. While it has not been tested in all circumstances, the masking effects seen with this method appear to be

similar to those of standard audiometric methods.

Summary

While it is true that some degree of deafness may be a normal accompaniment of aging, it may also be an important sign of more serious disease of the ear or of the nervous system. Although not the commonest cause of deafness, the presence of a neurological lesion should always be suspected. Because of the tendency of patients to be unaware of slowly progressive deficits, simple objective screening tests of auditory function are necessary, with more thorough evaluation carried out when these reveal hearing loss. Consideration of the structural and functional organization of the audiovestibular system and modern methods of evaluation can usually lead to an early and accurate diagnosis of the causative lesion.

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about twice as great in rural areas as in urban areas.

In Virginia, the peak number of reported cases extends from July through November, with the greatest number of cases being reported during the latter month (Table II). The following results are similar to the findings of Stewart and Hines.[9] Males accounted for 56.1 per cent and females for 41.6 per cent of the cases. The white race experienced 7.6 times the number of cases as that of the Negro race. The peak incidence occurred in the fourth and fifth decades, which accounted for 17.6 per cent and 20.2 per cent of the cases (Table III). The incidence between urban and rural areas was found to be different in Virginia. Twelve cities reported 161 of the 344 cases with the remaining 183 cases being distributed over 56 counties. The largest number of cases occurred in the city of Norfolk with 97, followed by Richmond with 25. Three counties reported between 10 to 25 cases, nine counties five to ten cases, and the remaining 44 counties from one to five cases. There appear to be fewer counties involved in the southwestern and western border areas of the State.

A number of studies were undertaken in an effort to find ectoparasites other than the oriental rat flea that could serve as vectors, and to find other animals that might serve as reservoir hosts. It is generally felt that the oriental rat flea and commensal rats are the only vectors of importance in the transmission of the disease. However, under spe-

TABLE I

Typhus Morbidity
United States and Virginia

Year	Cases in United States	Cases in Virginia	Year	Cases in United States	Cases in Virginia
1920	31	0	1944	5,401	24
1921	143	0	1945	5,193	21
1922	48	0	1946	3,365	7
1923	65	0	1947	2,050	10
1924	130	0	1948	1,171	8
1925	154	1	1949	985	3
1926	160	0	1950	685	4
1927	199	8	1951	378	3
1928	196	11	1952	205	4
1929	239	21	1953	221	3
1930	511	47	1954	163	2
1931	333	20	1955	135	2
1932	957	22	1956	98	3
1933	2,070	14	1957	114	0
1934	1,374	5	1958	71	1
1935	1,287	7	1959	51	0
1936	1,733	6	1960	64	1
1937	2,394	5	1961	42	0
1938	2,294	7	1962	32	0
1939	2,996	8	1963	29	0
1940	1,878	9	1964	30	0
1941	2,784	17	1965	28	0
1942	3,736	12	1966	33	0
1943	4,528	29	1967	44	0

TABLE II

Cases of Murine Typhus
Number and Percent By Month
Virginia, 1931-March, 1968

Month	Number	Percent
January	15	5.8
February	13	5.1
March	7	2.7
April	9	3.5
May	14	5.4
June	11	4.3
July	37	14.4
August	30	11.7
September	26	10.1
October	27	10.5
November	47	18.3
December	21	8.2
Total	257	100.0

cial circumstances, man could be infected by association with other susceptible animals such as a pet squirrel bearing fleas.[10]

The United States Public Health Service instituted a control program from 1945 to 1952 which included nine states that had a high incidence of the disease. The program consisted of DDT dusting, rat proofing and poisoning. There is much evidence indicating that this control program contributed to the reduction of murine typhus in the United States.[11] The following are case histories on the three cases reported in 1968.

TABLE III

Cases of Murine Typhus
By Age, Sex, Race, and Percent
Virginia; 1931-March, 1968

Age Groups	White Male	White Female	Negro Male	Negro Female	Not Stated	Total Number	Total Percent
Under 5		3		2		5	1.9
5-9	8	3				11	4.2
10-14	8	7	1	3		19	7.4
15-19	4	7	2	3		16	6 2
20-24	7	8		3		18	7.0
25-29	10	11				21	8 2
30-34	16	10	2	3		31	12 1
35-39	4	8	2			14	5 5
40-44	14	7	3			24	9 3
45-49	21	5		2		28	10 9
50-54	12	7		1		20	7 8
55-59	8	5				13	5 1
60-64	7	3	1			11	4 3
65 and over	7	3				10	3 9
Not stated	6	3	1		6	16	6 2
All Ages	132	90	12	17	6	257	100.0
Total Percents	51.4	35 0	4 7	6 6	2 3		

Case Reports

No. 1. A seven year old Negro male was first seen by a physician in Gretna, Virginia, on January 15, 1968. He was referred to the Franklin Memorial Hospital where he was admitted. His onset of illness began three days prior to admission with generalized aching and severe pain in the upper legs and abdomen. The past history was non-contributory. He appeared to be a well developed, well nourished Negro male lying in bed acutely ill. Vital signs were: temperature 100°F, pulse 90, respirations 20, blood pressure 100/60. No abnormalities were noted in the head and neck. The heart was normal; lungs were clear to auscultation and percussion. Generalized tenderness was elicited in the abdomen. There was marked muscular tenderness on movement of the lower extremities. The initial impression was that of influenza and the possibility of acute rheumatic fever was considered. The urine revealed a specific gravity of 1.024, albumin +1, WBC's 10-15 and a large number of casts. White blood cell count 7,500, hcrit 40, hgb 11.5 gms, polys 61, lymphs 33, stabs 5, eos 1.

He was placed on Wycillin, liquid diet, ASA for temperature, and given 500 cc of glucose and saline. He spiked a temperature of 102.4°F and it was controlled by ASA. A suggestion of neck stiffness was noted. On the following day, January 16, 1968, he was transferred to the care of a pediatrician in Roanoke and admitted to Roanoke Memorial Hospital.

On admission his physical examination revealed an acutely ill child with nuchal rigidity who assumed a tripod position. The abdomen was tender in the RLQ and LUQ with no rebound tenderness. Extremities revealed tenderness over distal muscles and

joints in all four extremities. He was alert and oriented with reduced strength in all extremities and 1+ reflexes bilaterally. The cranial nerves were intact. His vital signs were: temperature 102.5° F, pulse 150, and respirations 28. The following were considered initially: viral myositis, poliomyelitis, trichinosis, appendicitis. The lumbar puncture opening pressure was 14 mm. H_2O and clear, no cells, protein 300 mg. per cent, sugar 48 mg. per cent, chlorides 696 mEq/L, no growth. White blood count 5,955, seg 51, lymphs 44, monos 4, hcrit 35, hgb 11.7 gms, agglutinations Proteus OX-19 1:1400, OX-2 neg.; Creatinine 8.9 mg. per cent; VDRL non-reactive; chest x-ray and ECG normal. A repeat lumbar puncture January 20, 1968, showed 14 cells, 2 polys, 12 monos, total protein 13.5 mg. per cent. Repeat agglutinations January 27, 1968, OX-19 1:600 and OX-2 neg. These were repeated in the State Public Health Laboratory on January 29, 1968, and reported as OX-19 1:2560 and a complement fixation of 1:128 for murine typhus. The patient was initially treated symptomatically with aspirin and robaxin. On the day following admission he felt much better and did not complain of abdominal pain or muscle aches. Though weak, he continued to improve. He became afebrile on January 20. On January 21 he was found to have a tachycardia of 120 resting; an ECG was performed to rule out myocarditis but it was found to be negative. The following day his pulse was 90. When the elevated agglutinins were reported, an attempt was made to obtain a history of an exanthem but one could not be elicited from either the patient or the parents. The patient's recovery was uneventful.

No. 2. Three days prior to admission this nineteen year old Negro male developed pleuritic pain, shortness of breath, malaise, and a fever. He was admitted to the Richmond Memorial Hospital on January 26, 1968. The past history was not significant. Vital signs were: blood pressure 150/110, temperature 102° F, pulse 110, and respirations 24. The appearance was that of a well developed muscular, young Negro male who was drowsy and appeared acutely ill. He was conscious and well oriented. The face was symmetrical. The pupils and extraocular movements were normal. The fundi revealed the discs to be well outlined. The pharynx was slightly injected with tonsils enlarged and red. The neck was supple and the thyroid was not palpable. There was no venous distention. The lungs were clear to auscultation and percussion. The heart revealed a regular sinus rhythm with a rate of 110 beats per minute. The PMI was in the mid-clavicular line. There were no murmurs or rubs. The abdomen was slightly distended, with generalized soreness. No organs or masses were palpable. Back, skin, and neurological examinations were within normal limits. Laboratory findings on admission revealed a BUN of 64 mg. per cent. The urine showed a specific gravity of 1.015, albumin 3+, ph5, WBC's 6-10, RBC's 6-8, few bacteria, hyaline casts 3-4, and granular casts 2-3. The white blood cell count was 11,400, polys 87, lymphs 10, and monos 3. The SGOT was 348 units, hcrit 45, total bilirubin 0.9 mg. per cent, direct 0.6 mg. per cent, and the total protein 5.9 gm per cent with a slight increase in the gamma globulin fraction. A chest x-ray revealed a prominent left ventricular shadow with pulmonary vasculature. An ECG revealed a regular sinus rhythm, with a complete right bundle branch block.

The initial tentative diagnosis was acute glomerulonephritis. His condition markedly deteriorated within 24 hours after admission to the hospital, when he developed congestive failure and a diastolic gallop. A repeat chest x-ray at this time was read as bilateral pulmonary congestion and cardiac enlargement. He was seen in consultation by an internist who felt that he had acute glomerulonephritis with pulmonary edema. He was digitalized and was treated with penicillin and vibramycin. His condition progres-

sively deteriorated, with a rise in BUN and decrease in urinary output. Three days after admission febrile agglutinations were reported with a titer of 1:3200 for Proteus OX-19. A complement fixation for murine typhus was reported as 1:256. Negative results were obtained for heterophile and leptospiral agglutinations. The antistreptolysin titer was 125 units. Blood cultures times two were reported as no growth. The BUN peaked at 164 mg. per cent on the seventh hospital day, at which time his Na was 110 m Eq/L and K was 7.7 m Eq/L. A repeat OX-19 revealed a titre of 1:16000. He underwent peritoneal dialysis and progressively improved. Serial ECG's revealed improvement in the T waves from inverted to upright and complete resolvement of the right bundle branch block. He was discharged with a normal and adequate urinary output.

The final diagnosis was murine typhus with glomerulites and renal failure.

No. 3. A forty-two year old white female was seen by her physician in Wytheville, Virginia, on February 16, 1968, with the chief complaint of generalized malaise and a decreasing number of menstrual periods. Her weight was 127¾ lbs., temperature 98.6°F, and blood pressure 120/76. There were no significant findings of the head and neck. The heart had a normal sinus rhythm, no murmurs, or enlargement; chest was clear to auscultation and percussion. A large cyst was noted on the lateral area of the right breast. Initial laboratory studies showed a white blood cell count of 15,600, hcrit 45, and hgb 15.5 gms. The urine was negative for albumin and sugar; microscopic examination revealed a few epithelial cells. At this time a Pap smear was taken and the patient dismissed without being placed on therapy.

The patient returned on March 3rd with the chief complaint of awakening at night with "hot flashes", heaviness in breasts, and bilateral soreness of pectoral muscles. The physical examination, chest x-ray, and laboratory findings were not remarkable except for an elevated white count of 12,000. Routine agglutination studies were ordered. These were returned in several days showing a titer of 1:160 for Proteus OX-19. A course of Chloromycetin t.i.d. for one week was begun at this time. The patient was followed for a month with the white count and differential returning to within normal limits. During this time three specimens were collected for complement fixation studies for murine typhus and Rocky Mountain spotted fever. The former gave a four fold titer rise of less than 1:8 to 1:32 while the latter remained less than 1:8. The patient was last seen and asymptomatic on April 4. On the basis of laboratory studies the patient was diagnosed as having had murine typhus.

Discussion

Stuart and Pullen reported on the clinical observations of 180 cases from New Orleans that occurred during the period 1929 through 1944.[12] A summary of their findings is as follows:

Prodrome—In 46.6 per cent, a prodrome was noted, with the gradual onset of fever, malaise, cough, chest pain and coryza. The average prodrome lasted 2.7 days, with a range of 1-10 days. Two of our three cases (#1 and #2) experienced prodromes lasting 3 and 14 days respectively.

Onset—A sudden onset without antecedent prodrome, was described in 53.4 per cent of cases. Symptoms included chills, fever, severe headache, weakness, nausea and vomiting, and pains in the chest, back, limbs, and abdomen. None of our cases falls into the "sudden onset" category, although #1 and #2 did experience many of the above symptoms at the time of the intensification of their illness.

Rash—The rash was often not pronounced and sometimes comprised only a few macules which disappeared in two or three days. The rash characteristically appeared on the fifth day with a range of two to eight days. It was present in 63.8 per cent of the cases, with 81.39 per cent in

the white race and 19.6 per cent in the Negro race. None of the cases here presented developed a rash clearly attributable to the illness.

Temperature—The maximum temperature recordings varied from 102°F to 106°F, averaging 104°F. The fever characteristically began rising rapidly, usually reaching its maximum by the end of the first week. The average duration of the fever, which usually fell by rapid lysis, was 15.6 days. The first two cases had temperatures recorded of 102°F and 102.4°F, while the third case remained afebrile.

Neuromuscular Manifestations — Headache was the most prominent neurological symptom found in 85 per cent of the series, followed by stupor 15.5 per cent and delirium 6.6 per cent, with coma present in only three cases. Lumbar puncture was performed in twenty patients. In our series, Case #1 presented with nuchal rigidity and a positive Brudzinski. An LP was performed which was negative. All three cases complained of muscle soreness and pain.

Respiratory Manifestations—Evidence of respiratory tract involvement was present in over half of the large series. A short nonproductive hacking cough was present in 58.8 per cent. Coryza, sore throat, and chest pain were also frequent complaints. Rales, usually moist and basilar, were present in 30.3 per cent. Our Case #2 developed pulmonary edema shortly after admission, secondary to congestive failure. He also had chest pain, cough, and a questionable history of a sore throat.

Cardiovascular Manifestations — In the large series, cardiac failure occurred in two of the patients; one had pre-existing hypertension. The other was elderly with probable arteriosclerotic cardiovascular disease. In our group, six days after admission, Case #1 developed a tachycardia and an ECG was performed to rule out myocarditis. It was within reasonable limits. Case #2 had a right bundle branch block on admission and developed congestive failure which required digitalization within twenty-four hours.

Gastrointestinal Manifestations—Nausea, vomiting, or both were present in 36.1 per cent. Diarrhea varying a great deal in severity was present in 10.5 per cent. Some degree of abdominal pain in 21.6 per cent; distention 9.4 per cent; tenderness to palpation 7.2 per cent; palpable liver 6.6 per cent and palpable spleen in 32.2 per cent. Cases #1 and #2 had abdominal tenderness with abdominal distention in Case #2.

Genitourinary Manifestations—Transient albuminuria was present in 17 per cent of the patients. Cases #1 and #2 both experienced albuminuria and a few WBC's. In addition Case #2 had a few RBC's. He also developed an elevated BUN which necessitated peritoneal dialysis.

Hemogram—A mild leukopenia was seen during the first week of the disease with a mild leukocytosis during the second week (with counts ranging from 2500 to 15000 in uncomplicated cases.) The differential white cell count usually fell within normal limits, with the red blood cell count and hemoglobin not affected by the disease. These were also the findings in the three cases presented.

Diagnosis—Over 75 per cent of the patients were admitted to the hospital with a diagnosis other than typhus fever. The most common diagnoses were typhoid fever, pneumonia, malaria, influenza, pyelonephritis, viral pneumonia, measles, and drug rash. The correct diagnosis in our three cases was not made until laboratory studies were performed.

An epidemiological investigation of the three cases was undertaken in an effort to determine the source of infection. Each of the cases occurred in separate geographical areas and had not been out of their respective area for many months. Their place of residence was inspected for the presence of rat signs. Case #2 had no evidence of rodents at his home. Upon further questioning, he admitted drinking beer in the eve-

ning at several cafes and spending the night with a girl friend in her house trailer. All of these places were inspected and they too were non-contributory. There were numerous and fresh signs of rats in the nearby smokehouse and barn at the residence of Case #1. An attempt to trap, bleed for serology, and comb them for ectoparisites was made. This proved to be non-productive, as the residents had poisoned the rats before the trapper arrived. While the above cases lived in a rural area the third case lived in a small town. There was adequate harborage and fresh rat signs on the premises; however, the services of a trapper could not be obtained to study this case. A history of a similar febrile illness and flea bites could not be elicited from any of the members of the three households.

The State Health Department Laboratories perform, on request, several febrile agglutinations, which include Salmonella typhi-O, Salmonella paratyphi B, brucellosis, tularemia, Rocky Mountain spotted fever, and murine typhus. However, the agglutination test employed for the latter two uses Proteus OX-19 and OX-2 as antigens. Due to cross-reactions this test is not specific for differentiating between Rocky Mountain spotted fever and murine typhus. Complement fixation is a more specific test but is done only at the request of the physician. However, since these cases of typhus occurred, the State Laboratory has begun performing complement fixation tests routinely for both Rocky Mountain spotted fever and murine typhus on all sera with elevated Proteus OX-19 and OX-2 titers.

It is felt that the high incidence of Rocky Mountain spotted fever in the State and the lack of requests for complement fixation tests contribute to the absence of reported cases of murine typhus. Epidemiologically, typhus occurs throughout the year (as shown in Table II), whereas Rocky Mountain spotted fever is dependent on the presence of ticks which are absent during the winter months.

Summary

Three cases of murine typhus are presented with a summary of the historical developments of the disease.

The reporting of new cases of the disease after an absence of eight years is felt to be related to the high incidence of Rocky Mountain spotted fever and the lack of requests for complement fixation tests. The State Public Health Laboratory is now routinely performing complement fixation tests on all Proteus agglutinations that reveal significant titers. It is hoped that this report will serve to alert physicians to the existence of murine typhus and to consider it in their differential diagnosis.

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Addendum

Since submitting the manuscript for publication, a fourth case of murine typhus has been reported and investigated for the year 1968. An adult Negro male living in Pittsylvania County was hospitalized in South Boston in November. Complement fixation tests for murine typhus were performed on paired sera dated 11-25 and 12-2; both gave titers greater than 1:1024. The titers for Rocky Mountain spotted fever were both less than 1:8. That patient lived in a rural area and stated that the rats were so bad around his house that he had poisoned them approximately one month before he became ill.

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Sharp Rise in Deaths Among Young Men

Mortality rates of American males at ages 15-29 have risen sharply since 1961-62, when record low death rates at these ages were registered. An increase in fatalities from violent causes—chiefly motor vehicle accidents—has been the major contributor to the rise; mortality from non-violent causes, as a class, has actually declined somewhat.

The resident male death rate from all causes between 1961 and 1968 rose by a quarter at ages 15-19 and by about a fifth in the 20-24 and the 25-29 ages groups. According to available date, between 1961-62 and 1967 about three fourths of the increase in resident male mortality at ages 15-19 was due to the rise in death rate from motor vehicle accidents. Increased vehicular fatalities accounted for about two thirds of the overall increase in mortality among males aged 20-24 and about a half of the overall rise at 25-29. At ages 15-19, for example, the overall mortality rate increased from about 123 per 100,000 in 1961-62 to about 147 in 1967; and the motor vehicle accident rate rose from about 50 per 100,000 to about 67.

For all three age groups, the relative rise in the death rate from homicide has been greater than that from motor vehicle accidents. The relative increase in the homicide death rate was even greater for the younger and older age groups, i.e., 73 percent at ages 15-19 and 57 percent at 25-29 years. For suicide, as well, the relative advance in the death rate was somewhat greater than that for motor vehicle fatalities, but only among men in their twenties.

Mortality among young men in the Armed Forces overseas has also risen rapidly from the record low death rates of 1961-62. In the peacetime period of the early sixties the death rate of males, including the Armed Forces overseas, was generally lower than that of the resident population—owing to the physical selectivity of the military. With the involvement in Vietnam, however, the male population including the Armed Forces overseas has shown higher mortality than resident males.

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Hematology

The following are abstracts of articles presented at the Annual Meeting of the Virginia Society of Hematology, Virginia Beach, June 13-14, 1969.

CHRONIC ALEUKEMIC LYMPHOCYTIC LEUKEMIA.

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Of the lymphoproliferative disorders, lymphosarcoma with marrow and blood involvement (leukosarcoma) and chronic lymphocytic leukemia (CLL) are very similar and difficult to distinguish.

A review of the lymphoproliferative disorders seen at this institution from 1958-1968 revealed eight cases of a disorder which we have called chronic aleukemic lymphocytic leukemia (CALL). These patients have several clinical and laboratory features that are different from those usually seen in either leukosarcoma or CLL.

The cardinal findings in all patients were pancytopenia, hepatosplenomegaly and the absence of lymphadenopathy. A moderate to marked absolute granulocytopenia and a relative lymphocytosis with a normal or mild decrease in absolute number of lymphocytes persisted thoughout the course of the disease together with a mild to marked thrombocytopenia and anemia. Diagnosis was based on the histology of the bone marrow, which showed lymphocytic infiltration with a small mature lymphocyte as the predominant cell. The lymphocytes in the peripheral blood were usually the same morphologically as those in the marrow. Necropsy in two cases revealed organ involvement typical of CLL and only a few small retroperitoneal or peribronchial nodes involved. The mean survival from diagnosis was 4.2 years with a range of 1.5-7.6 years. Complications were predominately those of recurrent and resistant infections of skin, urinary tract, and respiratory tract. Six patients are now dead, one lost to follow-up, and one is living and doing relatively well postsplenectomy. Sepsis was responsible for four deaths while one died from spontaneous rupture of the spleen and one from myocardial infarction.

We have described a particular type of lymphoproliferative disorder (CALL) which is characterized by pancytopenia and infiltration of bone marrow, liver, and spleen with mature small lymphocytes, but sparing peripheral lymph nodes. This type of leukemia did not respond to cytotoxic agents but improvement was noted with prednisone, androgens, and splenectomy.

NEUROBLASTOMA (NB)—A REVIEW OF THE EXPERIENCE AT THE MEDICAL COLLEGE OF VIRGINIA.

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Since 1957, 21 children with NB and two children with ganglioneuroblastoma (GNB) were treated at the Medical College of Virginia. Of the entire group, only two patients are alive: one child with intrathoracic NB, age five months at time of diagnosis, has no evidence of disease 30 months after resection and postoperative radiotherapy. Another, age six months at time of diagnosis, has survived for six months but has widespread disease.

In an attempt to assess the factors respon-

sible for these unfavorable results, we have reviewed in detail the experience at the Medical College of Virginia. Six patients were under one year of age, and 14 were two years or older at diagnosis. The commonest site of the primary tumor was in the adrenal gland (52%). Other less common sites included the retroperitoneum (17%), posterior mediastinum (17%), and brain (4%). In the majority of cases (74%), the disease was already widespread at the time of initial examination. Distant metastases occurred most often in the bones (48%), bone marrow (48%), and liver (48%), although at autopsy an unusually high percentage (35%) had metastases to the lungs and pleura. Those with regional disease developed metastases within 12 months of diagnosis. Only three children, all with regional disease, had complete resection of the tumor. All others had either partial resection or biopsy. Four children died before any treatment could be instituted. Fifteen of 23 patients received postoperative radiotherapy. A variety of chemotherapeutic agents including Vincristine and Cytoxan were included as part of the initial treatment program in 15 patients with distant metastasis and in four with regional disease. The median survival time for the entire group was six months with the longest survival being 30 months for NB and 37 months for GNB. Those with the primary located in the adrenal gland had the shortest median survival time (four months).

Improvement in survival rate awaits advances allowing earlier diagnosis and a more effective method of treating widely disseminated disease.

A FURTHER EXAMPLE OF AUTOIMMUNE HEMOLYTIC ANEMIA DUE TO ANTI-i AND THE INCIDENCE OF ANTI-i IN INFECTIOUS MONONUCLEOSIS.

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A fourth case of IM complicated by acute hemolytic anemia due to anti-i is reported.

The patient was in good health until involved in an automobile accident six days prior to admission. On this day he was found jaundiced and anemic with 5.2gms% hemoglobin and a hematocrit of 15% which fell steadily to 4.5% and 12% respectively, over the next eight hours. The urine was strongly positive for bile and contained 160 mg% of hemoglobin. Plasma hemoglobin was 210 mg%. Physical examination had revealed an epigastric mass, and the patient was scheduled for surgery to relieve a clinically suspected liver hematoma. Difficulties in blood grouping and typing the patient were encountered and his serum was found incompatible with each of 78 different cells tested. The direct Coombs test was strongly positive. Surgery was postponed, but blood was released the next day based on compatibility tests between donor cells and an aliquote of the patient's serum absorbed with own cells. Because the antibodies were found to be cold agglutinins and because the patient was to have atypical lymphocytes and heterophile antibodies, it was suspected that the antibodies were anti-i in nature. Accordingly, special laboratory studies were initiated to confirm its nature. The following results were obtained which indicated that the autoantibody present was anti-i: (1) Cells were preferentially agglutinated in the cold, (2) Stronger reactions and higher antibody titers were obtained with cord blood than with adult cells, (3) Active eluates against cord cells were possible only when cord blood was used in the absorption phase, (4) The antibody was gamma-M and, (5) Antibody activity was abolished by treatment with 2-mercaptoethanol.

Two weeks after discharge a sample of the patient showed a negative direct Coombs test, and absence of anti-i antibodies.

The disappearance of the direct Coombs test, together with the appearance and disappearance of the anti-i agglutinins from the patient's serum concomitant with the onset of IM and recovery respectively indicates that these antibodies were the cause of the acute hemolytic crises in this patient.

The incidence of anti-i agglutinins among 52 patients with uncomplicated infectious mononucleosis was found to be 69.2%. Only one of the patients showed a significant titer, while the vast majority showed low titers and avidity for cord cells. None reacted with normal adult cells at 37° C but three reacted weakly at 4° C. Sera from 12 of the 52 patients who had recovered were retested for anti-i, four to six weeks after the onset of symptoms. All showed complete disappearance of the anti-i antibodies. It was concluded that anti-i are better correlated with the hemolytic and other complications of infectious mononucleosis than heterophile agglutinins.

THE BENEFITS OF PARAFFIN SECTIONS OF BONE MARROW ASPIRATES.

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In the examination of bone marrow films for diagnosis only a few particles of marrow from the aspiration are used. In biopsy studies one of the chief disadvantages arises from the small amount of tissue and the problem of whether the sample is a representative one. It is therefore illogical to discard the remaining marrow foci since these can all be easily examined by allowing the remainder of the aspirate to clot in a watch glass after films have been made. A relatively flat clot results, which can be easily processed by paraffin techniques after initial fixation in one of a number of fixatives.

Special stains can be carried out according to the nature of the investigation but usually H&E, PASH, and iron are adequate.

The value of this procedure is self-evident as the following examples will show:

1. The cells can be seen in their relation one to another as they existed in the marrow during life. The degree of cellularity can thus be more easily assessed.

2. It permits qualitative analysis. The relative distribution of lymphoid nests, plasma cells and RBC precursors is obvious though of course their cytologic structure should be checked on the films stained by Wright's method.

3. It permits iron store evaluation. Since haemosiderin deposits are irregularly distributed in marrow foci this method reflects a truer picture of the iron content than a random film evaluation.

4. Tissue foreign to marrow such as tumor cells, granulomata, parasites and fungi can be readily identified and confirmed by appropriate special staining.

The illustrations have been taken from approximately 1000 marrow aspirations obtained in conjunction with the Medical Services at the V.A. Hospital and the Medical College of Georgia.

In summary, the examination of paraffin sections of marrow aspirates can easily be carried out routinely and complements marrow film examination in facilitating a more accurate assessment of the marrow picture.

EXPERIENCE WITH THE WESTERMAN-JENSEN BONE BIOPSY NEEDLE.

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During the past six months several attempts have been made to obtain bone core biopsies from the posterior superior iliac crest using the Westerman-Jensen modification of the Vim-Silverman needle. Patients were selected from two categories. The first

category included those patients who had dry taps on attempted marrow aspiration and the second category included those patients who had x-ray changes of the pelvic bones suspected of being metastatic tumor. Biopsies from two patients were shown. One had myelofibrosis and the other had chronic lymphocytic leukemia.

Case 1. The patient was a 75 year old male who presented with weakness of 5 months duration and splenomegaly. The Hb. was 8.9 gms., Hematocrit 28%, and reticulocyte count was 2.6%. The WBC was 13,900 with 61% segs., 18% non-segs., 13% lymphs, 6% monocytes, and 2% basophils. On the smear, the RBC's were normochromic and demonstrated moderate poikilocytosis. A rare normoblast was seen as were a few myelocytes and metamyelocytes. Dry taps were obtained on attempted aspiration of the sternum and iliac crest. The core biopsy showed complete replacement of marrow fat by proliferating fibroblasts and an increased number of bizarre megakaryocytes admixed with residual hemopoietic tissue.

Case 2. This 66 year old male was diagnosed as chronic lymphocytic leukemia two years ago. Recent treatment has included two weeks of cytoxan but this was discontinued one week previously. The patient was complaining of marked weakness. Hb. 8.1 gms., Retic. 1.5%, WBC 5,800 with 92% small lymphocytes. A marrow aspiration yielded only a few tiny hypocellular particles. A core biopsy showed marked leukemic infiltration in the marrow.

IRON ABSORPTION IN STEATORRHEA. *Munsey S. Wheby, M.D.* Department of Medicine, University of Virginia School of Medicine, Charlottesville, Virginia.

Badenoch and Callender reported that patients with idiopathic steatorrhea absorb iron poorly. Iron deficiency anemia is more common in idiopathic steatorrhea than in tropical sprue. Although this may be related to duration of disease it could also indicate that iron absorption is less impaired in tropical sprue. In the present study iron absorption was measured in 33 patients with steatorrhea associated with tropical sprue. Others studied included eight normal subjects and five patients with iron deficiency anemia. All were given orally 5 mg. of elemental iron labeled with ^{59}Fe. All subsequent stools were collected for up to two weeks and the amount of ^{59}Fe excreted was assayed in a 4 Pi gamma detector. Results in tropical sprue were: (1) Absorption varied but was greater than normal in 13 and less than normal in only two of 22 patients with megaloblastic erythropoiesis and stainable marrow iron. (2) Absorption was normal or less in seven of eight with normoblastic erythropoiesis. (3) Iron absorption did not correlate with the serum iron, iron binding capacity, severity of steatorrhea or jejunal histology. (4) Most of those with increased iron absorption had abnormally low absorption of vitamin B_{12}.

Thus, in tropical sprue, in contrast to idiopathic steatorrhea absorption of elemental iron may be normal or greater than normal. Steatorrhea, per se, need not result in malabsorption of elemental iron.

REPORT OF A CASE OF HISTIOCYTIC MEDULLARY RETICULOSIS. *Byrd S. Leavell, M.D.* Department of Medicine, University of Virginia, School of Medicine, Charlottesville, Virginia.

A 60 year old white man survived for 22 months after the onset of a disease subsequently diagnosed as histiocytic medullary reticulosis. Diagnosis was established antemortem by biopsies of a lymph nodes, liver and bone marrow. The patient died with pneumonia; autopsy confirmed the original diagnosis and also that of cytomegalovirus

disease. This patient survived longer than any other in 63 cases thus far reported.

The disorder was first described by Scott and Robb-Smith in 1939. Nearly all of the reported patients have been middle-age or older. Clinical manifestations have been fever, wasting, lymphadenopathy, hepatosplenomegaly, abdominal pain, jaundice, hemolytic anemia, leukopenia, thrombocytopenia and bleeding. Most patients have died within three months and very few have survived over six months. Treatment with the usual agents has been ineffective.

The characteristic features of the disease in diffuse proliferation of the histiocytes and their precursors throughout the reticuloendothelial system. Erythrophagocytosis by mononuclear cells is seen frequently but is not specific. It has been suggested that for a diagnosis the characteristic lesions be found in at least two of the following organs, liver, lymph nodes, spleen, or bone marrow.

SICKLE CELL ANEMIA: A LITTLE KNOWN COMMON DISEASE. *Robert B. Scott, M.D. and John C. Lane, B.S.* Department of Medicine, Medical College of Virginia, Health Sciences Division of Virginia Commonwealth University, Richmond, Virginia.

Sickle cell anemia is the most common long-term illness of Negro children. It occurs in approximately one in 500 births, a prevalence of 200 cases per 100,000 children. This far exceeds most major childhood illnesses which are much better known to the public. Examples are acute leukemia (1 in 2900 children), cystic fibrosis (one in 3000 births, 98% Caucasian), and P.K.U. (one in 10,000, 99+% Caucasian).

The prevalence of sickle cell trait is about 8% or one in 12. The chance of two trait-carriers marrying is 1/12 x 1/12 or one in 144. Thus, in one family in 144 (0.7%) there is a high risk of having children with this incurable serious disorder.

Despite these facts of the importance of sickle cell anemia, there appears to be little public awareness of the problem in the Negro community. To determine the level of awareness, a survey was conducted in Richmond. Adult Negroes from various parts of the city were questioned as to knowledge of sickle cell anemia, utilizing a brief questionnaire. Age, address, and educational level were tabulated also.

A total of 1457 Negro adults were included. The distribution was representative of the distribution of Negro individuals throughout the city. Only 441 (30%) had ever heard of sickle cell anemia. Some of those who answered affirmatively had little actual understanding of the disorder. Many who answered affirmatively knew of the illness because of a friend or relative who had the illness. Awareness was closely related to educational level. Sixty-five percent of college graduates had heard of the disease but only ten percent of those with less than 9th grade education had.

Although sickle cell anemia is by far the most important long term health problem among Negro children, there is little public knowledge of this fact. Increased public awareness is necessary before public support for better programs of rehabilitation, research, prevention, and patient care will be provided.

ACRYLAMIDE GEL ELECTROPHORESIS PATTERNS OF HUMAN ERYTHROCYTE MEMBRANES: NORMAL *VS* HEREDITARY SPHEROCYTOSIS. *G. K. Limber, M.D., R. Davis, M.S. and S. Bakerman, M.D.* Department of Pathology, Medical College of Virginia, Health Sciences Division, Virginia Commonwealth University, Richmond, Virginia.

Band patterns from normal erythrocyte membranes and those from patients with

hereditary spherocytosis were studied following acrylamide gel electrophoresis. Hemoglobin free membrane was solubilized in a pheno-urea-acetic acid-water solvent and electrophoresed on a 6.6% acrylamide gel. The bands were developed with coomassie blue. The final preparation was 50% protein, 38% lipid, and 10% carbohydrate for both normal and hereditary spherocytotic membranes. Complete amino acid analyses of membrane from the two groups were again similar. However, hereditary spherocytotic membrane did not always produce band patterns identical to the more than 100 normal control patterns. Over thirty band patterns from seven patients with hereditary spherocytosis were obtained. These patterns fall into two categories. In the first there is a diminution or absence of one of the major bands. In the second this band is identical to that in the normal controls. The significance of these findings is discussed.

INTRAVASCULAR COAGULATION COMPLICATING HIRSCHPRUNG'S DISEASE AND ENTEROCOLITIS. *Harold M. Maurer, M.D., Orestes S. Valdes, M.D., Clare N. Shumway, M.D. and William E. Laupus, M.D.* Department of Pediatrics, Medical College of Virginia, Health Sciences Division, Virginia Commonwealth University, Richmond, Virginia.

Although a number of episodes of intravascular coagulation associated with a variety of clinical disorders have been documented by coagulation studies, there are relatively few detailed reports of the use of heparin and replacement therapy with whole blood and blood fractions in such cases.

A five week old white male was admitted to the Medical College of Virginia with Hirschprung's disease, enterocolitis and Staphylococcus aureus septicemia. During surgery to relieve intestinal obstruction, he bled freely. This was followed by a generalized bleeding diathesis. Coagulation studies disclosed marked prolongation of the one stage prothrombin time, activated partial thromboplastin time and thromboplastin time and thrombin time, and clot lysis occurred initially but not subsequently. Factors I, V, and VIII were not measurable, the platelet count was 24,000/mm^3 and split products of fibrinogen were demonstrable. The findings were indicative of intravascular coagulation. Hemolytic anemia associated with burr cells, pyknocytes, and some fragmented erythrocytes on the peripheral blood smear accompanied the abnormal hemostasis.

Although the infant was treated with heparin, fibrinogen, fresh frozen plasma, fresh whole blood, platelet concentrates, steroids, and antibiotics, clinical, hemostatic and hematologic improvement occurred slowly over several weeks. During this interval, studies suggested subacute or chronic introvascular coagulation.

REPORT OF AN ACQUIRED, COMBINED FACTOR VIII AND IX DEFICIENCY IN A 62-YEAR-OLD NEGRO MALE. *E. Freed, M.D., L. M. Fisher, M.D., W. Dabney, M.D., and W. Stern, M.D.* Departments of Pathology and Medicine, Medical College of Virginia, Health Sciences Division, Virginia Commonwealth University, Richmond, Virginia.

O. W., a 62-year-old Negro male heavy construction worker was admitted to the Hampton, Virginia, Veterans Administration Hospital on October 1968, with swelling of both upper arms of two weeks' duration. Previously, he had been in good health aside from several episodes of questionable "arthritis" ten years prior to admission in-

volving the left ankle and right knee. A biopsy was performed to aid in diagnosis. This revealed hemorrhage and muscle, and the biopsy site continued to bleed. Initial studies of his hemostatic mechanism revealed an abnormality in the first stage of clotting (thromboplastin formation), affecting Factors VIII and IX. The patient subsequently had bleeding into his face, associated with an abscessed tooth (7 teeth were extracted), swelling of his left thigh and knee and also right thigh and knee. His latest admission in May of this year was for bleeding under his tongue with extension to the left neck.

Coagulation studies during this time revealed normal clotting factor essays except for Factors VIII and IX, with levels being less than 10% of normal. The PTT was prolonged to more than 200 seconds (normal 70-80″). The bleeding time and platelet count were normal, and there was no evidence of lysis.

Using the recalcification time, a circulating type anticoagulant was demonstrated on several occasions. The thromboplastin generation test revealed a defect in both the $Al(OH)_3$-absorbed plasma fraction and in the serum, the latter being less marked. Use of cryoprecipitate and fresh plasma or blood in treatment did not influence the PTT significantly.

Should a physician who carries health insurance submit a claim for treatment he has provided for a member of his family? In reply to this question, the AMA's Judicial Council recently handed down this opinion: "From time immemorial it has been considered unwise and improper for a physician to treat members of his immediate family for other than minor health problems or in emergencies. For him to do so would be in violation of Section 6 of the *Principles of Medical Ethics*. Even if for some good reason it becomes necessary to treat a member of his immediate family, a physician should not charge, or make a claim for, or receive compensation for such service from the patient or from a third party payor on the patient's behalf."

Learning Disabilities

FATHY A. ABDOU, M.D.
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About 10% of children have learning difficulties. Cerebral dysfunctions and emotional disorders are among the disturbances underlying these difficulties. Team work of those connected with the school, home and guidance clinic is the most effective way of helping these children.

IT HAS BEEN REPORTED that about 10% of school age children have learning difficulties which require special services outside the regular classroom. Seventy percent of the children referred to the Norfolk Mental Health Center, Child Guidance Clinic are for "school underachievement". This is more common in boys than in girls in ratio of eight to one. Although learning disabilities may be symptoms of other troubles, focus on the disabilities per se will be emphasized in order to attempt to simplify this complicated subject. Rabinovitch approaches the topic through a consideration of the multiple areas of the child's functioning involved in academic learning, disturbance in any of which may lead to the symptom of learning retardation or distortion. Most important are in his opinion the following: (1) general intelligence, (2) specific capacities, (3) developmental readiness, (4) emotional freedom to learn, (5) motivation, (6) opportunity. Although there is no clear distinction between the following two entities and there is a great deal of overlap in the majority of cases, we will approach the topic on the basis of (a) learning problems due to emotional disorders, (b) learning problems due to cerebral dysfunction.

ABDOU, FATHY, M.D., *Director, Child Guidance Division, Mental Health Center of Norfolk and Chesapeake.*

Emotional Disorders as Primary Causes for Learning Problems

Although some children with severe emotional disorder learn very well, generally emotionally disturbed children do not learn very well. On the other hand, some psychiatric disorders may result in inappropriate learning or undesirable experience. Reading difficulties by far exceed all other learning problems. It is important to note that learning is a function of the ego. This includes perception, cognition, integration, reality testing, coding and de-coding, storage and retrieval of information. Other factors involved in ego functioning are arousal, attention and motivation. Any impairment in the functions of the psychic apparatus which may result from early experiences in the family such as in the process of toilet training or the intake of food; attitudes towards the parents may affect the learning process. The teacher-child relationship represents an important tool for learning. Aversion to learning may result from a difficult situation in which the child finds himself—such as a harsh teacher, undetected handicap, ill health, excessive competition with peers, excessive absence from school, being ridiculed by others, fear of excessive aggressivity of peers. A power struggle with the parents is fairly common where the child uses all of his energies in an effort to defeat the teacher and the parents. Over protected children may react to intolerable anxiety

resulting from the frustration of learning by withdrawing and avoiding of the learning situation altogether.

If learning is symbolically equated with aggression, then a fear of learning may become overwhelming because it would mean competition with the parent or an older sibling and surpassing him. This is sometimes called "success phobia" which is associated with unconscious fear of retaliation. This may be even stretched further with guilt and self punitive masochistic attitude when the child feels he is stupid or dumb and unable to learn. The same mechanism applies when learning is symbolically equated with sexuality.

Children who feel excessive grandiosity or omnipotence are often fearful to expose their inadequacy in a learning situation. Autistic thinking may lead to a unique, inappropriate symbolization relationship to learn. Also, psychotic and schizophrenic children who use primary process thinking or archaic thinking may find it difficult to grasp the logic, "time-sequenced", "cause and effect", and abstract learning situations. Intra-psychic conflict, conscious or unconscious, will not allow the ego to be free for the process of learning. The child will be preoccupied, inattentive, obsessed with irrelevant thoughts. He may be restless and unable to concentrate. When the parental attitude toward education in general or the school and the teacher in particular is negative or indifferent, the child will follow the same trend and will find it difficult to identify with the teacher or learn.

The lack of motivation on the part of our school children today is of national concern. There are two types of motivation: extrinsic for which reward is the goal and intrinsic which implies inner satisfaction as the incentive. Children who show very little interest in learning show the same in every aspect of responsibility. They just get by.

There are those children who have been raised by parents that do not make demands upon them. Even the child-parent roles may be reversed. Others have been offered no values by which to live. Another group is the passive followers of other undesirable leadership. The culturally deprived child in school very often is a learning and behavior problem. Only a small proportion of these children complete high school or enter college. These are usually from poverty stricken families, alienated from the main stream of culture, who can provide only minimal sustained parental stimulation and opportunities for the children to learn and explore the world. They lag in cultural and verbal skills which incapacitate them from meeting the expectations of them. As a result, they gradually fall behind academically and socially. The remedies for these emotionally determined factors in learning problems are numerous—psychotherapy, remedial teaching, special classes, special school, innovations in the school curriculum, the use of new teaching techniques and new materials such as reading primers featuring urban, racially integrated and realistic characters, team teaching which employs specialists in the various curricular areas, extra curricular stimulation and efforts to bring parents closer to the school, to increase guidance programs, reduce the size of classes and to improve the quality of the teachers of the schools in the disadvantaged areas are all applicable. The use of audio-visual or teaching machines to instruct children for whom human interaction is anxiety producing may be helpful with psychotic children. The application of conditioning techniques can be very rewarding. Special classes of small size, averaging ten children, should exist within public schools, mental health centers and residential treatment centers. Grouping of children in these special classes is based generally on homogeneity of the nature of the disturbances. The technique of therapeutic milieu is often employable. It has become more and more apparent that these children require a team of educationalists, clinicians and others working together harmoniously.

The Organic Problems Leading to Learning Disability or the Syndromes of Cerebral Dysfunction

Eisenberg cautions that diagnosis of brain damage merely permits the assertion that the brain is damaged. It is quite another matter to conclude that the behavior disorder is a necessary consequence of demonstrated damage. The concept of minimal cerebral dysfunction is defined by Clements as "children of average intelligence with certain learning or behavioral disabilities, ranging from mild to severe, which are associated with deviations of functions of central nervous system. These deviations may manifest themselves by various combinations of impairment in perception, conceptualization, language, memory and control of attention, impulse or motor function." The extent of the cerebral dysfunction symptomatology varies a great deal depending on the degree of the central nervous system involvement and the efficiency of parental management and interaction. For example, a highly intelligent child who has benefited from good child-parent interaction may more readily respond to ways of coping with a specific learning disability than another child who is not so fortunate. Also, parental reactions and expectations play a great role. The meaning of the child and his behavior for this set of parents and expectations of his social, cultural milieu are also influencing factors. One pair of parents may derive gratification from a hyperactive, aggressive youngster as indicating they have produced a real boy. Another pair of parents may be overwhelmed by the same picture. The hyperkinetic, impulsive disorder and specific learning disabilities are often grouped together under the headings of minimal cerebral dysfunction, minimal brain injury, or minimal brain damage. The most recent possible and authoritative estimate of the incidents has been given by Masland as occurring in about 5% to 10% of the school population. They are more common among the socially culturally deprived, but their impact may be greater in more intellectually oriented groups in the population. The clinical picture starts in early days of life and is particularly common in first born males. The newly born may be unduly sensitive to stimuli and may respond in an undifferentiated, massive aversive manner.

This reminds one with Freud's concept that there is a boundary to the developing ego that protects human organism against being overwhelmed by stimuli and this is in some way deficient in these infants. The negative reactions of the baby with the mother may lay the ground work for a negative relationship—at least predominantly. The toddler stage is rather rapid and scarcely exists. The child is described as constantly on the move, into things, difficult to restrain and upsetting to the most patient adult. The child is unable without great and conscious effort to inhibit his response to any stimulus that comes along regardless of appropriate meaning or significance. In addition, the child seems incapable of attending to more than one stimulus at a time and for no more than ten seconds because of his rapid decay of memory traces. Serial, repetitive sampling and the monotonous repetitive activity may be important learning and adapting mechanisms for such children.

Please note that the description of hyperactive children applies to the normal child at least at some moments. The difference may be that the hyperkinetic child does it more often and perhaps when and where he should not such as in an inappropriate situation in school or church. Eisenberg describes the abnormalities in attention of the brain damaged children as "these abnormalities in inattention have the greater impact on adjustment because they interfere with cognitive development. A child learns most efficiently when he attends. The brain damaged child has difficulty in focusing his attention selectively and in sustaining it. In the extreme he is at the very mercy of every

extraneous sight and sound in his environment. He fails to apprehend what is of moment because he is distracted by the trivial and the transient. In this he behaves like the normal infant and very young child." These children are very impulsive and unable to delay gratification. They are often accident prone. They also seem to have a need to handle and finger things. They find it very hard to solve a problem visually before tackling it manually. They are often explosive and irritable. They may be set off by relatively minor stimuli and they themselves may seem puzzled and dismayed over this. They are emotionally labile with variable and unpredictable mood changes. They may have a preoccupation with water play and a fascination with spinning objects. They may have disturbances in left-right discrimination internally and projected on the environment; in spatial orientation, temporal orientation, in visual or auditory perception, in visual-motor coordination, in fine motor coordination, in figure-background discrimination, in the ability to abstract, conceptualize, generalize and in the ability to assimilate, retain and recall. The hyperkinetic syndromes are likely to diminish by late childhood and to disappear almost entirely by adolescence. Presumably this reflects the increased capacity for inhibition normally associated with maturation. The organic lesions of these children may set limits upon ultimate attainment in the best possible environment. However, one can observe that the brain damaged child is more at the mercy of his environment than the normal child. Since school programs are designed with the average child in mind, they do not seem to suit the needs of the brain damaged child. To quote Eisenberg, "We cannot conclude from the fact that he who has not learned to read by the methods adequate for the ordinary child that he could not, if attempts were made to by-pass his deficiencies by making use of other sensory motor channels." The reinforcement of the capabilities he does have could well enhance the efficiency. The hyperkinetic syndrome may have some familial basis since often times their parents describe that they had been similar to their children in hyperactivity.

The psychogenic impact within the family of the brain damaged child is very important. Even though we might sympathize with the parents for having a frustrating negativistic child, we have to consider what it means to the child if he finds himself rejected for something he cannot control and does not understand. It is important to consider the child's image of himself which depends on the way he sees others viewing him and what he himself feels capable to do or to be. If the parents cannot provide warm acceptance which originates the sense of personal worth for the normal child, the inner core of the child's self concept will be that of worthlessness. The disabled child must daily face the painful realization of his incompetence at play and at work. No praise or reassurance will satisfy him or change this incompetence. Since these children are unable to control their aggressive impulses, this makes them vulnerable to a feeling of powerlessness, guilt for the consequences of their misbehavior and fear of punishment for this behavior. Such children ask for and need external controls. The permissive atmosphere does increase the burden of guilt and increase the potential of impulsivity with these children. These children are usually given the run-around when they proceed to ask for help. Psychotherapists often reject them because they view them as organic problems—not good candidates for psychotherapy. Neurologists accept them but cannot attend sufficiently to their psychological problems. The families of these children would need a great deal of assistance since they usually have the problems any family might have plus the special difficulties associated with these disorders. In school these children are often exposed to frequent punitive measures such as suspensions and extra home work, etc.

Special classes for the brain damaged children are highly desirable and special research for methods of teaching them is very much in need. Goldstein has discussed the feelings of catastrophic helplessness experienced by the brain injured individual when he finds himself in a situation with which he feels he cannot deal effectively. In response to an anxiety and the likely pre-conscious awareness of inadequacy in controlling his body and his environment, the dysfunctioning child is prone to develop the obsessive compulsive rituals described by Schilder.

The dysfunctioning hyperactive child needs to have a learning situation which reduces the amount of environmental stimuli in space, have a well ordered structure that increases the stimulus value of the teaching materials presented to the child. A child with a visual perceptive deficiency needs special remedial work in order to be able to acquire the visual organization of skills fundamental to reading. Psychotherapy of the hyperkinetic syndrome consists of frank conveyance of the problem to the parents; also, informing them with a fair amount of confidence that the hyperkinetic syndrome behavior will be outgrown or improved, treated or untreated, when the child approaches adolescence. However, this does not apply necessarily to the learning problems or the emotional complications or sequelae. Psychotherapy for the children, helping them with the emotional problems discussed earlier, can be beneficial. However, medication seems to be a very important line of treatment for these youngsters. The clinician and parents need to keep in mind that the emotionally determined problems will not be erased by these medications. A frequent observation is that neurologically based dysfunctions worsen under conditions of psychic stress. Conversely when psychological state improves by psychotherapy there ought to be concomitant improvement in the symptoms associated with cerebral dysfunction. In psychotherapy with minimal cerebral dysfunction children it ought to be clear that obsession and ritualistic behavior is different from the obsessive-compulsive neurotic behavior in that there is neither fixation at the anal level nor ambivalence in object relationships as with the latter. The most effective medications commonly used are the stimulants such as the amphetamines and Ritalin® or the phenothiazine groups. These can be used either separately or in combination. Sometimes the medication has a dramatic effect on the symptomatology even at the level of psychological testing which may show marked improvement. Remedial learning and helping the teacher in the special class situation appropriately geared for these children are very important measures to be taken. Counselling with the parents is also very helpful. They ought to recognize that the fashionable permissiveness is not beneficial for these children. They ought to be helped to accept these children as they are, become more knowledgeable as to what to expect of them realistically, become relieved of their frustration and guilt in their relationship with them. Also, help the parents understand that these children may excel in different areas of functioning than others. These areas of accomplishment on the part of the child should be picked out by the parents and the teachers and the clinician, and the child should be rewarded for improving his efficiencies in them. Depending on the severity of the symptoms, the cooperation of the parents, the correction of the teaching and learning situation, the helpfulness of psychotherapy and medication, the presence or absence of remedial learning, also the gap of learning and the social and economic status of the family—all these factors will be the prognosis of the disability.

Summary

A review of the literature on learning problems has been presented. This was done perhaps in a too concise and over simplified manner in order to orient the readers as much and as clearly as possible to the un-

derstanding of these problems. Although learning disabilities have been categorized into emotionally determined and organically determined, a great deal of overlap between the two is the most common; indeed a combination of emotional as well as neurological etiology seems to be the prototype of any learning disability. Team work of clinician therapist, teacher, remedial teacher, case worker with the parents, pediatrician, all harmoniously working together, is the most efficient way of handling this problem in cooperation with the frustrated, disabled youngster and his parents.

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Diagnostic Laboratory Medicine....

BRUCE S. RABIN, Ph.D.

Autoimmune Thyroiditis: Historical Aspects and Laboratory Diagnosis

In 1901, Ehrlich first used the phrase "horror autotoxicus" [1] based on his experimental failure to induce a goat to produce hemolysin against its own blood cells. From his work with animals he proposed that an individual does not normally synthesize immune substances harmful to itself. Such an antibody (which was not detected at that time) was called an autoantibody. However, Ehrlich's farsightedness in realizing that someday this autoantibody might be discovered is set forth in the last sentence of his third paper on hemolysins[2] where he says, "In the explanation of many disease phenomena, it will in the future be necessary to consider the possible failure of the internal regulation, as well as the action of directly injurious exogenous or endogenous substances".

Autoantibody may be defined as antibody which reacts with antigen that is an integral part of the antibody-producing animal itself. On the basis of specificity, two types of autoantibody have been recognized. One is denoted as non-tissue specific and will react with all or most of the organs of the antibody producer. The second type is organ specific which reacts only with a single organ.

In 1900, the same year that Ehrlich warned not to accept unconditionally the "horror autotoxicus" theory, Metalnikoff succeeded in partially disproving it.[3] By the injection of guinea pig sperm into another guinea pig, antibody was produced that reacted with suspensions of the antibody producer's own testicle.

Hutchinson in 1896[4] isolated a globulin from the thyroid that was later named thyroglobulin by Oswald.[5] In 1925 and 1927, Hektoen and Schulhof[6] and Hektoen, Fox, and Shulhof[7] noted that specific antisera against thyroglobulin were not entirely species restricted. Rabbit antisera prepared against beef, dog, horse, and human thyroglobulin all reacted with beef thyroglobulin. Conversely, rabbit anti-hog thyroglobulin reacted with thyroglobulin from beef, horse, human, monkey, rat, sheep, and swine. Using simple saline extracts of thyroid, Witebsky, Rose, and Shulman in 1958[8] found, as had Hektoen with purified thyroglobulin, that a thyroid antiserum would react with thyroid extracts of some but not all other species.

This work established that thyroglobulin is organ specific. However, it should be noted that this organ specificity is not as broad as that reported by Uhlenhuth[9] for the lens and for the brain by Witebsky and Steinfeld.[10]

In each of Hektoen's papers mentioned above, he reported that rabbit antiserum against the thyroids of other species would also precipitate a rabbit thyroid extract. Lerman[11] in 1942 also found that a rabbit antiserum to human thyroglobulin would precipitate a rabbit thyroglobulin preparation. However, Lerman was unable to produce a rabbit thyroid antibody in the rabbit by injection of rabbit thyroglobulin. This observation was not inconsistent with previous findings in other organ specific systems although Rivers[12] in 1935 reported the development of anti-monkey brain antibody in the monkey following repeated injections of autolysed or vaccinia infected monkey brain extract.

In 1948, Freund[13] reported in detail on the mixture now widely known as complete Freund adjuvant. In 1951,[14] he observed that

guinea pigs could be sensitized against guinea pig brain and that allergic encephalomyelitis was produced rapidly when the antigen was incorporated into this adjuvant. In 1953 and 1954, Freund reported[15,16,17] on the development of aspermatogenesis in the guinea pig following a single injection of sperm or testicular suspension incorporated into adjuvant.

In 1956, Rose and Witebsky[18] attempted to challenge directly Ehrlich's 'horror autotoxicus" theory by immunizing rabbits with rabbit thyroid extract incorporated into complete Freund adjuvant. The rabbit antiserum was found to contain an antibody specific for rabbit thyroid extract. To determine if an autoantibody had been produced, rabbits were completely thyroidectomized or hemi-thyroidectomized and then injected with extracts of their own glands incorporated into complete Freund's adjuvant. In both cases antibodies were produced against extracts of their own as well as other rabbit thyroid glands and against thyroid extracts of other species. The examination of the thyroids of these immunized animals showed typical thyroiditis lesions including reduction in the amounts of colloid and invasion by lymphoid, phagocytic, and eosinophilic cells. This further confirmed the autoantibody nature of the anti-rabbit thyroid rabbit antibody.[19]

Witebsky, Rose, Terplan, Paine and Egan[20] established thyroglobulin as the major autoantigen of the thyroid gland. Rabbit thyroglobulin, when purified by ammonium sulfate fractionation[21] and combined with complete Freund's adjuvant, would induce antibodies in the rabbit that reacted with rabbit thyroid extract. These immunized rabbits showed thyroid damage that was similar to rabbit immunized with crude thyroid extract. Beutner, Witebsky, Rose, and Gerbasi,[22] using the immunofluorescent technique of Coons and Kaplan,[23] found that rabbit thyroid antibodies stained the colloid of rabbit thyroid glands. It is in the colloid that thyroglobulin is stored. The staining reaction was thyroid specific.

The thyroid is composed of follicles which consist of a layer of glandular cells enclosing the colloid. Due to its anatomical location, the thyroglobulin may not come in contact with the general circulation when the body's immune mechanism is being established.[27] Therefore, when injected during adult life thyroglobulin may be considered foreign and antibodies produced against it. David and Holborow[28] investigated this possibility experimentally. Within eighteen hours of birth, and again five days later, newborn rabbits were injected with rabbit thyroid extract. Two months later they were challenged with antigen in complete Freund adjuvant. No difference was found between pretreated and control animals. Both groups produced antibodies and showed thyroid damage to the same degree. Similar results have been reported by Rose and Doebbler.[29]

Rose and Witebsky[18] reported that the injection of rabbit thyroid extract alone into rabbits would not lead to the production of antithyroid antibodies unless complete Freund adjuvant was used. It would, therefore, seem that if thyroglobulin were to leak out of the gland *in vivo,* no autoantibody would be produced. However, if the cause of thyroglobulin leakage were to serve also as an adjuvant, the process of autosensitization could be explained. Whether this hypothetical adjuvant could be genetic, viral, or other is not known. The work of Hjort[30] in 1961 agrees with this concept. He studied patients after thyroidectomy operations and found that although thyroglobulin was released into their circulation only one out of thirty patients showed evidence of autosensitization.

Stylos[31] injected rabbits with papain-treated rabbit thyroglobulin and did get antibody production without the use of adjuvant providing further evidence that alteration of native thyroglobulin is necessary to initiate an autoimmune disease. Weigle[32] also has found that alteration of an

antigen is sufficient to reverse immunological tolerance. In addition, it has been shown that when thyroglobulin is emulsified with complete Freund adjuvant and injected into an animal, the thyroglobulin becomes altered from its native structure.[25] The recent demonstration of native thyroglobulin in the circulation of primates[36] is consistent with the hypothesis that tolerance exists to thyroglobulin and that alteration of thyroglobulin will break the tolerance and result in immunological activity.

The mechanism of damage in autoimmune thyroiditis is still unknown. The likely causes are circulating antibodies or delayed hypersensitivity. Based on the morphological similarities between the early stages of thyroiditis and reactions of delayed hypersensitivity, Flax[33] feels that delayed hypersensitivity is involved in the pathogenesis of the disease.

Miescher, Gorstein, and Benacerraf[34] conjugated thyroglobulin with a hapten in order to decrease serum antibody production while not interfering with the ability of the antigen to induce delayed hypersensitivity. They found a positive correlation between the incidence of thyroiditis and delayed skin thyroglobulin reaction but no correlation between thyroiditis and circulating antithyroglobulin antibody.

Rose, Kite, and Doebbler[29] tried to produce the disease in normal guinea pigs by the transfer of lymph node cells from a sensitized animal. The results were negative, but this may have been due to the use of non-inbred animals which would possibly reject the cells before they could function effectively. Using inbred guinea pigs, Felix-Davies and Waksman[35] were able to transfer thyroiditis by the use of lymphoid cells. The disease has not been transferred with lymphoid cells in highly inbred mice, but it has been transferred in inbred rats.[37,24]

Witebsky, Rose, Terplan, Paine, and Egan[20] have reported that certain dogs immunized with thyroid extract show extensive glandular damage but no circulating antibody. Chandler, Kyle, Hung, and Blizzard,[38] and Beierwaltes[39] found that female rabbits that had thyroiditis were able to transfer precipitating antibody to their fetuses and that the newborn rabbits had the antibody in their serum for approximately eight weeks. However, no thyroid damage was found. Rose, Kite, and Doebbler[29] found that serum from an immunized animal, when transferred to a normal one, had no effect on the normal thyroid gland. Doebbler and Rose[40] found that the use of alum as an adjuvant with thyroglobulin led to the production of circulating antibody but no pathology.

Recently, it has been shown that early immune serum from rabbits immunized with thyroid extract could transfer the disease to non-immunized recipients.[26] Only sera from thyroidectomized donors were effective indicating that antibody is rapidly absorbed onto the thyroid gland of the donor. This early antibody may be a cytophilic antibody which would render lymphoid cells of the recipient capable of eliciting tissue damage. Therefore, both cellular and humoral mechanisms may be involved in the disease process.

In 1956, Roitt, Daniach, Campbell and Hudson[41] began a study of patients with Hashimoto's disease of the thyroid. When serum from these patients was reacted with human thyroglobulin *in vitro,* a precipitation reaction was obtained. This was the first demonstration that humans with thyroid disease had antibodies in their circulation that would react with thyroglobulin.

Following the discovery of circulating antibodies in patients with thyroiditis several more sensitive tests than precipitation were adapted to the assay for thyroglobulin antibodies. These were indirect red cell agglutination, complement fixation, *in vitro* cytotoxicity, and immunofluorescence.

A brief description of each test follows:

Indirect red cell agglutination (tanned cell hemagglutination-TCH) — Erythrocytes, treated with very dilute concentrations of

tannic acid, will absorb proteins onto their surface. Antibody directed against the absorbed proteins will cause aggregation of the red cells. The titer of the anti-serum is expressed as the reciprocal of the highest dilution of antiserum which produces positive agglutination. Antibodies directed against thyroglobulin are reactive in this test.

Complement fixation (*CF*)—Complement combines with antigen-antibody complexes when the antibody is of the IgG or IgM classes. When the antigen is a red blood cell, and it is coated with specific anti-red cell antibody, the fixation of complement will result in lysis of the erythrocyte (hemolysis). Reaction of a non-erythrocyte antigen with its specific antibody will also fix complement. As an example, the mixing of thyroid epithelial cell microsomes with antimicrosomal antibody will fix complement. This reaction uses up available complement so that upon the addition of sensitized erythrocytes there is no hemolysis. If thyroid cell microsome are mixed with a serum that contains no antimicrosomal antibody, complement is not bound and lysis of sensitized erythrocytes occurs. Therefore, the absence of erythrocyte lysis is an indication of a specific antigen-antibody reaction. This test, as has been indicated, detects antibodies directed against thyroid microsomes.

In vitro cytotoxicity (CYTO)—The interaction of specific antibody and complement with tissue culture cells may result in their destruction. Antibodies from patients with thyroid disease that destroy thyroid cells *in vitro* combine with a microsomal antigen. This antigen may differ from that of the CF test as some sera may be positive in one test and negative in the other.

Immunofluorescence—After applying the patient's serum to a thin section of thyroid tissue, a fluorescein conjugated anti-gamma globulin serum is added. Attachment of the fluorescein conjugated globulin to the tissue indicates that the patient's serum contained antithyroid antibody. This technique detects antibodies with a thyroglobulin specificity (colloid staining) or a microsomal specificity (cell cytoplasm staining).

The types of antibodies and their titers show great variation depending on the nature of the thyroid disease. One study has compared the TCH, CF, and CYTO antibody titers of patients undergoing thyroid surgery.[42] Patients having no antibody detectable by either of the 3 tests had the pathological diagnosis of normal thyroid, adenoma, or thyroid carcinoma. The patients that did have antibody were diagnosed as having diffuse hyperplastic goiter, colloid goiter, nodular toxic goiter, or chronic thyroiditis. Of the positive sera, 17 were reactive in CYTO and not TCH, 5 with TCH and not CYTO, and 14 sera were positive for both tests. Therefore, of 31 sera that were positive by CYTO, only 19 would have been determined as containing antibody by TCH alone. All sera in this study reacting in the CF were also positive with TCH or CYTO.

In another study on the CYTO antibody alone,[43] 96% of patients having Hashimoto's thyroiditis had positive results as well as 67% of thyrotoxicosis patients, 16% of nontoxic nodular goiter and 29% of relatives of patients with thyroid diseases. Of those with no thyroid disease, 9% were reactive. The high percentage of positive results with thyroid disease is an indication of the possible hereditary nature of autoimmune diseases.

In summary, as can be determined from the data, the cytotoxic antibody test will detect the greatest percentage of patients having antithyroid antibody. This test, however, is the most difficult to offer in a clinical laboratory as it requires highly specialized laboratory techniques and facilities. Of the CF and TCH tests, the TCH is more sensitive and easier to perform.

Currently, the TCH test is being performed by the Microbiology (Serology) Section of the Division of Clinical Pathology at the Medical College of Virginia.

Patients most probably having antibody detectable by TCH will have diffuse hyperplastic goiter, colloid goiter, and chronic thyroiditis. Of these three groups, the greatest percentage of positive results will be from patients with chronic thyroiditis.

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Mental Health . . . .

EDNA M. LANTZ

Services for Mentally Ill Patients in Private and General Hospitals in Virginia

Prior to the late 1950's, the classic picture evoked by discussion of psychiatric inpatient services was, for the vast majority of patients, the large regionalized and normally isolated state mental hospital, with specialized private hospitals catering to the favored few who could "afford" their services. Few general hospitals, for whatever reason, offered inpatient facilities even on an emergency basis to a psychiatrically diagnosed patient.

Due to many factors, not the least of these being hospitalization insurance coverage for mental illness, the above stereotype is changing. Citizens are beginning to realize that not every case of mental illness requires long and expensive hospitalization, that many acute and less severely impaired patients may soon return to their normal lives in the community and that the private and general hospitals can and do play a large part in the day-to-day treatment of all segments of the population. Concomitant with this change in public attitudes and increases in available professional personnel, general hospitals have slowly begun to extend services to mentally ill patients. Today an increasing number of general hospitals provide either designated units or will accept patients diagnosed as mentally ill.

At local, state and national levels, efforts are being made to evaluate these emerging community services. Due to lack of well developed reporting systems and the overall growth of the program, data are not available to assess completely the efficacy and desirability of the systems being developed to deliver mental health care. However, the results of a recent inventory by the National Institute of Mental Health would appear to highlight the impact of these services on the state-operated inpatient facilities and the potential savings realized by the taxpayer.

In January of 1969, the Institute conducted a survey of patient movement within all reporting inpatient mental health facilities in the United States. The report of the survey was made available to each individual State for facilities located therein. While limited, the Virginia report is of interest in outlining the current relationship of the "private sector" with the State Hospital System.

The survey of the Commonwealth included reports from four specialized private psychiatric hospitals, twelve general hospitals with specifically designated psychiatric units and an additional eight general hospitals which reported movement of patients with a psychiatric diagnosis. While not necessarily semantically accurate, it is these reporting units which are referred to as "private" inpatient facilities in this paper.

As of July 1, 1967, the four specialized hospitals reported a census of 385 patients. Admissions during fiscal year 1968 totalled 4,530. There were 18 deaths and 4,533 other separations through June 30, 1968, leaving in the hospitals on that date 364 patients. The average daily number of inpatients was 399 and the total rated bed capacity reported was 480.

The twelve general hospitals with designated psychiatric units had 289 such inpatients at the beginning of the same fiscal year. 6,891 admissions were reported. With 14 deaths and 6,907 other separations, the

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Approved for publication by the Commissioner, Department of Mental Hygiene and Hospitals.

June 30, 1968 census was 245 with a rated bed capacity for all twelve facilities of 349.

Those eight general hospitals without designated units did not report admissions as such. However, they did report discharge of 1,076 patients with a psychiatric diagnosis.

Thus, if one utilizes the admittedly tentative figure of 1,076 patients in the category immediately above as admissions as well as discharges, there were admitted to the entire private facilities during the fiscal year ending June 30, 1968, a total of 12,497 psychiatric inpatients. During the same period of time 12,516 patients were discharged. No data were given on average length of stay in hospital. From general observation of this type of care, however, this was probably less than 30 days. Also, because the report represents a summary, the number of repeaters during the year cannot be determined. Therefore, the actual number of individuals involved may be somewhat less than reported.

On July 1, 1967, the four State Hospitals had 11,182 patients in residence. Total admissions during fiscal year 1968 were 7,603 patients. These, added to the 12,497 admitted to private institutions (which includes the 1,076 with psychiatric diagnosis in general hospitals) bring the total admissions throughout the State to 20,100. Thus it will be seen that, contrary to generally accepted concepts of care, private facilities actually handled 62% of the total admission case load.

When one recognizes that there are more than 130 hospitals of all types—private, community and public in Virginia—and that relatively few of them engage in psychiatric practice, it is easy to see the potential implications of a range of community mental health services utilizing more than the 20 community hospitals involved in the Study. If 20 hospitals plus the four private psychiatric hospitals account for 62% of admissions at present, cooperation of additional hospitals not now handling such cases should affect the percentage of psychiatric admissions to State mental hospitals.

Public Health . . . .

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Implications of the Proposed Ionizing Radiation Rules and Regulations

The use of ionizing radiation in Virginia, as in over half the other states, is regulated and controlled by both the federal and state governments. The Atomic Energy Act passed by Congress in 1954 gave the U. S. Atomic Energy Commission the responsibility of regulating byproduct material, source material, and special nuclear material. This left the responsibility for the control of x-ray producing devices and naturally occurring isotopes, such as radium, up to the various states.

In 1960, the Bureau of Industrial Hygiene drafted a Radiation Safety Law which was considered by the Virginia Advisory Legislative Council for possible legislative action. The bill, subsequently termed the "Radiation Registration Law", became the first legal requirement imposed on users of x-ray equipment and certain radioactive materials. Identification, location, and quantitation of the potential sources are basic to a good radiological health program and are fundamental aspects of the program performed by the Agency.

In 1963 it was decided that a more comprehensive radiation safety law was desirable and one was developed and submitted to the Virginia Advisory Legislative Council. This bill was approved in principle by the various medical groups and was endorsed by the Board of Health and by the Southern Interstate Nuclear Board. A representative from each organization spoke formally on behalf of the Bill and it was passed by the 1964 Legislature without opposition. In addition to giving the State Department of Health wide latitude in drafting rules and regulations for radiation safety, this Bill established a Radiation Advisory Board to advise and assist the Health Department.

In accordance with the 1964 "Radiation Control" Law, the responsibility for radiation control was vested in the State Health Department's Bureau of Industrial Hygiene. The Bureau has made substantial progress in developing an active voluntary radiation safety program. During the last fiscal year, staff members conducted an extensive dental and medical survey program. Of the medical units surveyed, 29 percent did not meet minimum safety requirements. Of the units found to be sub-standard, approximately two-thirds were corrected in the field. The remaining units required more extensive repair from service representatives. The cooperation of the medical profession with this program has been excellent, and much has been accomplished toward the Bureau's goal of minimizing radiation to all persons using ionizing radiation or subjected to radiation exposure, consistent with the clinical needs of the patient as determined by his physician.

In addition to the surveys and other advisory services performed by the Agency, a limited program of environmental surveillance has been maintained and is currently being expanded in both methodology and geographical scope.

In recent years several states, in addition to fulfilling their responsibilities in the fields of x-ray and radium control, have assumed on a contractual basis certain of the regulatory functions previously carried out by the Atomic Energy Commission. For example, although the A.E.C. maintains control of reactor installations and all Federal facilities, the so-called "Agreement States" take over regulatory control of most medical, educa-

tional, and research facilities which use radioisotopes. In June, 1969, the Virginia Radiation Advisory Board reaffirmed their opinion that Virginia should proceed to consummate such an agreement with the A.E.C.

As proposed, the new regulations will affect those persons using radioisotopes only to the extent that after the Governor signs the agreement with the A.E.C., the State will become the licensing and regulating agency. These regulations are quite similar to the A.E.C. model regulations so there will be little change by the Bureau from the provisions and recommendations now in effect.

Previously, x-ray and radium control was implemented on an entirely voluntary basis; only registration of these items with the Bureau of Industrial Hygiene was required. Although cooperation with this type of program was good, the new regulations regarding shielding, exposure limits, collimation and filtration of x-ray beams, and other areas will make it easier for those who work in the field of radiation to comply with those standards of the Bureau's voluntary program. Other areas, such as semi-annual leak testing of sealed radium sources and annual calibration of x-ray therapy units, will receive increased emphasis. Possession of radium and accelerator-produced isotopes above certain quantities, depending on the isotope, will require a license from the State Health Department. X-ray equipment will continue to be registered, not licensed.

The possibility exists that the Board of Health will approve and adopt the proposed rules and regulations before the agreement with the A.E.C. is consummated. In that event, the sections pertaining to x-ray and radium regulations would go into effect immediately, whereas the sections dealing with items now regulated by the A.E.C. would not become effective until the agreement is signed.

It is to be remembered that the purpose of these regulations is to provide guidelines for the achievement of radiation safety. They do not represent an attempt to infringe upon any physician's right under the law to prescribe and administer either diagnostically or therapeutically any dose of radiation which he believes necessary.

Monthly Report of Bureau of Communicable Disease Control

	Nov. 1969	Nov. 1968	Jan.-Nov. 1969	Jan.-Nov. 1968
Brucellosis	4	—	54	47
Diphtheria	—	—	—	—
Hepatitis	48	75	417	537
Meningitis (Aseptic)	4	4	31	107
Meningococcal Infections	2	3	59	44
Poliomyelitis	—	—	—	—
Rocky Mt. Spotted Fever	—	1	81	40
Rubella	38	30	1688	621
Rubeola	40	88	720	407
Streptococcal Sore Throat and Scarlet Fever	1483	1326	13197	12717
Tularemia	—	—	4	3
Typhoid	—	—	1	9
Rabies in animals	27	11	363	132
Venereal Disease				
Syphilis	116	140	1262	1505
Gonorrhea	1320	1184	11756	9738
Other	—	4	39	15

Woman's Auxiliary....

Honored

. . . Mrs. W. Nash Thompson, Stuart, was elected recording secretary for the Woman's Auxiliary to the Southern Medical Association at the annual meeting in Atlanta.

Awards from Southern

. . . *Doctors' Day*—The Woman's Auxiliary to the Richmond Academy of Medicine received honorable mention for the county of over fifty members for the best doctors' day observance. The Woman's Auxiliary to The Medical Society of Virginia received honorable mention for the best state doctors' day display.

Research and Romance—The Woman's Auxiliary to the Northampton-Accomack Medical Society received honorable mention for the county of under fifty members for their scrapbook of auxiliary, medical and hospital history.

Accent—Family Solidarity

. . . The Children and Youth chairman, Mrs. M. Pinson Neal, Jr., attended the workshop in Washington, D. C., in October, at which time the national auxiliary leaders placed the emphasis in the area of Family Solidarity. If your programs for this year are completely established it is hoped that county presidents-elect will include this emphasis when formulating programs for their presidential year.

Aid to AMAERF

. . . has never been more needed. Especially in this time there is a growing need for funds", emphasized Mrs. William Reardon, Virginia AMAERF chairman, for all AMAERF projects, *Student Loan Funds, Funds for Medical Schools,* and the *Bio-Medical Institute.* One of the most important and frequently overlooked facts is that *every single cent* given to AMAERF goes exactly to the recipient designated by the donor. Not a penny is taken out for administrative personnel or operating expenses! These are absorbed by the American Medical Association. These facts, though frequently published, cannot be stressed enough.

One interesting fact about the Bio-Medical Institute is that they receive absolutely no federal funds. The work they have done and the tremendous strides they have made in the field of cancer research alone should be enough to inspire all of us. A tour through the institute may be made with an advance appointment when you are visiting Chicago.

Money designated for medical schools, for example, in the State of Virginia from donations was *$4,629.77. $16,909.22* came into the State for the two medical schools here. No one can say Virginia does not get its share! It is of interest to note that many of the medical schools are in serious financial difficulties. *Three* almost kept their doors closed this last fall due to lack of funds. What alternative is left to them except to receive more and more *federal aid* which is, of course, accompanied by *jurisdiction* and *policy.*

Is the Money Working?

You bet it is. There are 3,628 loans now in use from the Student Loan Fund. The student may borrow up to $10,000 and only begins to repay the loan *five years* after opening the practice. "What a worthwhile place for our efforts and funds", concluded Kay Reardon.

The Norfolk Auxiliary has arranged for the sale of Smithfield hams again this year with a percentage going to AMAERF. The Boneless Hams weigh approximately six and eight pounds and sell for $2.95 per pound.

Hams with the Bone-In run from six to ten pounds and sell for $2.25 per pound. If you are interested you may contact Mrs. Aubrey L. Shelton, 149 Redgeley Road, Norfolk, Virginia, 23505 or telephone 489-3430.

The Fairfax Auxiliary is planning their second benefit horse show April 25 in the wake of last years success.

Annual Meeting

The Forty-seventh Annual Meeting of The Woman's Auxiliary to The Medical Society of Virginia was called to order by the President, Mrs. Robert D. Keeling, on October 17, 1969, at the Americano South, Virginia Beach.

Mrs. F. Clyde Bedsaul gave the invocation.

The Pledge of Allegiance to the Flag and the Pledge of Loyalty were led by Mrs. William Bishop.

Mrs. John Krueger, President of the Virginia Beach Medical Auxiliary gave a short address of welcome to which Mrs. Robert Schultz gave the response.

Mrs. Thomas Hunnicutt, Jr., read the Convention Rules of Order.

Mrs. Keeling recognized the past presidents and introduced the following Honored Guests: Mrs. Robert Beckley, Treasurer, Woman's Auxiliary to the American Medical Association; Mrs. Wilson Smith, Eastern Regional Director of the AMAERF; Mrs. F. Ashton Carmines, wife of the outgoing President of The Medical Society of Virginia.

The report of the Reading Committee was read by the chairman, Mrs. W. Nash Thompson who reported that the minutes of the last annual meeting had been approved.

Mrs. Herbert W. Rogers, Treasurer, reported a balance on hand in the General Fund of $1,466.66 and $1,500.00 in the savings account. The report was filed for audit.

The Credentials Committee report was given by Mrs. William Johnson who reported that there were a total of 80 voting delegates registered.

The Auditing Committee, Mrs. William Johnson, Chairman, reported the treasurer reports for 1968-69 had been found correct.

Finance Chairman, Mrs. Walter Porter, read the proposed budget for 1969-1970 and moved that it be accepted. The motion was seconded and passed.

Dr. William Grossmann, incoming President of The Medical Society of Virginia, addressed the convention.

The Secretary then read and moved adoption of the following recommendations from the board: AWARDS

The awards for AMAERF are based primarily on bookkeeping and so it is recommended that the choices be made by the AMAERF state chairman on the basis of her records. These awards are:

(1) silver tray for largest total giving of an Auxiliary

(2) certificate for largest total contribution of an Auxiliary

(3) certificate for greatest effort and increase over last year

Mrs. C. Leon Jennings, Jr., moved that the first recommendation be tabled. Seconded and carried.

No. 2 Inasmuch as Community Service projects carried out under chairman of such areas as International Health, Mental Health, and Children and Youth, it is recommended that: these named chairmen, and chairmen of related areas as may be appointed later, submit reports of three component Auxiliaries judged best to the Awards Chairman no later than sixty days prior to State Convention. (The final choice of recipient of the silver tray would be made by Awards Chairman and her committee.)

No. 3. The Health Careers award (silver tray) is now given to the Auxiliary with the greatest number of points on a check list devised by the Health Careers chairman. The choice is thus made by the State Health Careers Chairman, but with consultation with the Awards Chairman as needed. It is recommended that this system be retained.



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Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a post history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thrombaembalic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

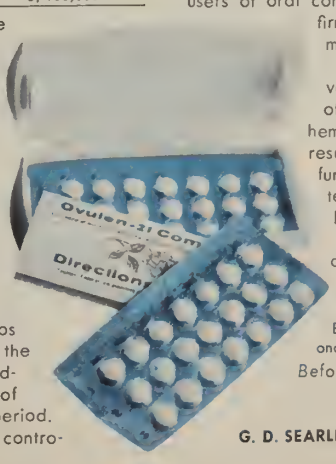
The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching. The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.



References: 1. Inman, W. H. W., and Vessey, M. P.: Brit. Med. J. 2:193-199 (April 27) 1968. 2. Vessey, M. P., and Doll, R.: Brit. Med. J. 2:199-205 (April 27) 1968.

Before prescribing see complete prescribing information.

Where "The Pill" Began

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SEARLE

972



Nose clear as a whistle

(THANKS TO DIMETAPP)

Dimetapp Extentabs® does an outstanding job of helping to clear up the stuffiness, drip and congestion of colds and upper respiratory allergies and infections. Each Extentab keeps working up to 12 hours. And for most patients drowsiness or overstimulation is unlikely. Try Dimetapp. It clearly works.

FOR UPPER RESPIRATORY ALLERGIES AND INFECTIONS

Dimetapp Extentabs®

Dimetane® (brompheniramine maleate) 12 mg., phenylephrine HCl 15 mg.; phenylpropanolamine HCl, 15 mg.

UP TO 12 HOURS CLEAR BREATHING ON ONE TABLET

Indications: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, sinusitis, rhinitis, conjunctivitis, and otitis.
Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

A.H. ROBINS COMPANY
RICHMOND, VA. 23220

A·H ROBINS

No. 4. Doctors' Day Awards are two, one to the Auxiliary under fifty members, and the other to an Auxiliary with more than fifty members. Judging is based on a point system and is carried out by the Doctors' Day Chairman. Major points:

(1) How well the observance attained the real purpose of Doctors' Day—that of honoring our physicians

(2) Public relations value

(3) Personal pleasure afforded to Doctors through entertainment

(4) Completeness of report and visual presentation

No. 5. It is recommended that the silver trays be returned to the AWARDS Chairman or a person designated by her thirty days prior to the State Convention (to allow engraving time).

No. 6. However, in view of the modest financial resources of the State Auxiliary and the *recurring* costs of engraving, and the *limited* usage by the Auxiliaries who win these silver tray awards, it is recommended:

That the silver awards be retired by 1973.

No. 7. It is further recommended that at such time as the silver awards are retired, consideration be given to an awards system consisting of certificates and or contributions to AMAERF in the names of the winning Auxiliaries in small and large categories.

The remaining six recommendations under "Awards" were seconded and passed.

Mrs. M. Pinson Neal, Jr., read the following resolution and moved that the resolution be accepted with copies to be sent to the President and President-Elect of The Medical Society of Virginia.

RESOLUTION FAVORING A STATE MUSEUM OF SCIENCE

Whereas, the Woman's Auxiliary to The Medical Society of Virginia supports areas of significant public interest.

Whereas, a special Committee on Children and Youth has been established by the National and State Woman's Auxiliary.

Whereas, a Study Commission which has just reported to the Governor concerning a Museum of Science in the State of Virginia has sought out the Auxiliary's help by putting our full support behind the Commission on the feasibility of establishing a Science Museum.

Whereas, a Science Museum will benefit not only today's children, youth, and adults, but future generations in showing the evolution of science, illuminating science as it is today, and projecting science for the future.

Whereas, the Study Commission will be seeking legislative support from each and every member of our State Auxiliary and other influential and deeply interested scientifically oriented groups.

Whereas, our special interest would be in the health science fields

Be it resolved that the Woman's Auxiliary to The Medical Society of Virginia go on record in supporting the Science Museum.

Be it further resolved that the Auxiliary recommend that a Health Science Division be included in the museum plans.

Be is further resolved that all county Auxiliaries seek approval from their Advisory Council, and if they approve, then recommend to their respective Boards that a statement and motion be passed to fully support the Science Museum in the State of Virginia and recommend the inclusion of the Health Science Division in the projected plan.

The motion was seconded and passed.

The Secretary read and moved adoption of the following proposed changes to the By-Laws which were seconded and passed.

Article IV

Section 1. The dues of this Auxiliary shall be six dollars ($6.00) per year, four dollars ($4.00) of which shall be sent to the Woman's Auxiliary to the American Medical Association as per capita dues. (The remainder of this section to remain the same.)

Article VII

Delete—Section 3. District Councilors

Note of Explanation:

In Article IV, the change is *$6.00 per year* rather than $4.00, as the new *requirement* of National is $4.00 per capita per year.

The Historian, Mrs. F. Elliot Oglesby, read and moved adoption of the following recommendations for the Scrapbook Awards which were seconded and passed.

(1) That two awards be given annually. One for Auxiliaries with membership above seventy-five members. The other for Auxiliaries with membership below seventy-five.

(2) That each Auxiliary be responsible for its section of the State Scrapbook containing their officers, chairman etc., plus any highlights of their years work. Pages to be supplied three in number or as many extra as needed by Auxiliary, not to exceed eight single pages or sixteen double pages.

(3) That these three pages be given to Auxiliary representatives at the Mid-winter Board Meeting, and additional requested pages mailed by Historian no later than June 15th.

(4) That all scrapbook Chairmen be requested to send any pertinent clipping concerning State-wide publicity or snapshots of President's visit to local Auxiliary for President's personal scrapbook.

(5) That all scrapbook pages be returned to State Historian no later than July 15th.

(6) That a set of rules be drawn up by which scrapbooks are judged and submitted to new board for passage.

(7) That no less than three persons, no more than five, be considered judges for scrapbook—one to be a past Historian and one the incoming Historian with an additional member of the Auxiliary as third person.

Mrs. K. K. Wallace, Jr., Chairman of Arrangements, made the convention announcements.

Under the new business:

Mrs. Clarke Pole moved that $600.00 be removed as needed from the savings account to continue the newsletter this year. Seconded and passed.

Mrs. Jorge Naranjo moved that a committee of three (the new president, present editor of the newsletter, and one other individual)) study the present continuation of the newsletter on a financial contingency basis by whatever means they may devise; and that at the Mid-Year Board Meeting the newsletter be given permanent status in our financial report, realizing that it is our only means of reaching all of the members. Seconded and passed.

Mrs. Michael Puzak moved that in so far as possible, an agenda of items to be discussed and voted upon at the general meeting be sent to the local auxiliaries at least one month prior to the meeting, so that the local auxiliaries can discuss these items with their boards and general memberships. Seconded and carried.

Mrs. Joseph Straughan moved that the convention recommend Mrs. Robert D. Keeling to The Woman's Auxiliary to the A.M.A. for consideration for national office. Seconded and carried by a standing unanimous vote.

The President announced that Mrs. Daniel Anderson has been appointed the Eastern Regional Chairman of Children and Youth. Mrs. Randolph Hoge announced that the annual convention would be held in Richmond next year.

In the absence of Mrs. Virgil Ray Forrester, Mrs. Neal relayed her greetings and moved that the convention send a telegram to Mrs. Forrester, President of the Woman's Auxiliary to the Southern Medical Association, extending to her our greetings from Virginia and our wish to her for a very speedy recovery. Seconded and carried. The Corresponding Secretary was so instructed.

The President again introduced Mrs. Beckley who delivered the keynote address.

Mrs. L. C. Strong, Jr., Chairman, announced the following awards:

AMAERF—Fairfax Auxiliary received a silver tray and two certificates of achievement for the greatest overall contribution and the greatest increase.

Wise County Auxiliary—A certificate for the greatest per capita giving.

Community Service—Richmond Auxiliary received a silver tray.

Health Career—Richmond Auxiliary received a silver tray.

"Doctor's Day"—Mrs. Howard presented the Margaret Howard award of a silver bowl to Richmond Auxiliary.

Northampton-Accomack—received a silver bowl for the auxiliary having a membership of under fifty.

Mrs. F. Elliot Oglesby, Historian, presented the following Scrapbook Awards:

Farifax Auxiliary received a blue ribbon for the auxiliary having a membership above 75.

Portsmouth received a blue ribbon for the Auxiliary having a membership below 75.

Mrs. Keeling announced that the Report of the Delegates to Forty-Sixth Annual Convention of the Woman's Auxiliary to the American Medical Association would be published in the newsletter.

Mrs. Daniel Anderson gave the report for the Nominating Committee and there being no nominations from the floor the following slate was elected:

President: Mrs. Joseph Straughan
President-elect: Mrs. Reuben F. Simms
1st Vice President: Mrs. Harold Williams
2nd Vice President: Mrs. Michael Puzak
3rd Vice President: Mrs. William Reardon
Recording Secretary: Mrs. Donald Fletcher
Corresponding Secretary: Mrs. William N. Gordge
Treasurer: Mrs. Daniel B. Hill
Directors: Mrs. Robert Keeling
Mrs. Daniel Anderson
Mrs. A. Broaddus Gravatt

Mrs. Reuben Simms read the report of the Countesy Resolutions Committee and moved for its acceptance. Seconded and carried. A copy will be attached to the minutes.

The memorial service conducted by the Chaplain, Mrs. F. Clyde Bedsaul, paid tribute to the following deceased members: Mrs. C. C. Long, National President from Arkansas; Mrs. G. W. Johnson, Richmond; Mrs. Hugh Willis, Danville; Mrs. Thomas Vermillion, Hampton; Mrs. J. K. Devine, Lynchburg.

The meeting was reconvened in the Crystal Room of the Americano South, at an Installation Luncheon, Mrs. Robert Keeling presiding. The invocation was given by Mrs. Kalford Howard. Among the honored guests were the past presidents, members of the Medical Society Advisory Council, Dr. Robert Keeling, husband of the Auxiliary president, Dr. Joseph Straughan, husband of the incoming president, and Dr. Reuben Simms, husband of the incoming president-elect.

The Virginia Beach Auxiliary presented a delightful skit entitled "His Fair Lady".

Mrs. Robert Beckley, Treasurer of the Woman's Auxiliary to the A.M.A., then installed the newly elected officers.

Mrs. Joseph Straughan, the newly installed president, spoke to the group outlining the objectives from the new year and then accepted the President's pin from Mrs. Keeling. Mrs. Daniel Anderson then presented the Past-President's pin to Mrs. Keeling.

Mrs. F. Elliott Oglesby, State Historian, presented Mrs. Keeling with the President's Scrapbook of personal mementos of her year in the office and also presented the State Scrapbook.

The meeting was adjourned.

Mrs. Harold L. Williams
Secretary

Mrs. Robert D. Keeling
President

Editorial . . . .

The Staff of Aesculapius

APOLLO, the god of healing among the ancient Greeks, could visit a plague upon mankind or heal, depending upon his whims. Among his many duties, was that of physician to the Olympian gods. The peony, interestingly enough, was his chief instrument in healing their diseases or wounds. He was the original fountainhead of all medical knowledge, according to Greek mythology. Apollo saw fit to transmit medical knowledge to the centaur Chiron, the son of Saturn. This centaur was assigned, as private tutor, to several prominent beings, including Aesculapius. They were versed in ancient lore, music, and surgery, especially.

Aesculapius, the son of Apollo and Coronis, the nymph, became extremely proficient at the healing arts and apparently did so well that the master of Hades, Pluto, accused him of reducing the numbers of his dominion. Pluto complained to Zeus, who in turn sided with Pluto, and caused a thunderbolt to be hurled at Aesculapius, thus abruptly ending a promising career.

While still practicing his arts, Aesculapius received help from his wife, Epione, and daughters, Hygieia and Panacea, in carrying out temple rites and, in particular, feeding the sacred snakes. It should be noted that the snake, or serpent, was the favorite companion of the gods of many ancient religions, and Aesculapius was no exception, being represented as having a single sacred snake entwined about a rod beside him.

An interesting sidelight is that among the recorded sons of Aesculapius, the poet Homer mentions Machaon and Podalirius as being excellent physicians and warriors. They would then be the prototype for our present day military-naval surgeons and physicians.

Because of the fame of the healing powers of Aesculapius, the Aesclepiads, an organized guild of physicians, was founded, with appropriate temples in proper settings being organized. Among the most famous of these temples were those of Cnidus, Epidaurus, Cos, and Pergamus. Physician-priests were in charge of each, which apparently resembled more of a health-resort or spa. Rites of incubation or templesleep were practiced. Records were kept at these "Asclepieia" on carved stone columns. Hippocrates reputedly was a pupil at the Medical School of Cos, which was probably the most prominent of the "Asclepieia". Grecian descriptions of disease originated at these early schools of medicine, so far as we know.

The staff of Aesculapius is thus the true symbol of medicine. The snake was considered sacred and was depicted to represent wisdom and prudence. The staff represented the life giving quality of the physician. The

ability of snakes to shed their skin represented immortality and convalescence in their ability to change from lethargy to rapid activity.

The so-called Staff of Hermes (or Mercury) is sometimes used as the symbol of medicine; however, Hermes was not a physician but a clever thief who served as the "god of rogues". He was appointed to send the souls of the dead to Hades—scarcely the function of a physician. Legend indicates the snakes of Hermes had no medical significance—they were merely found fighting, or worse, and were separated by his wand.

It is interesting that the Medical Department of the United States Army continues to use the Staff of Hermes (or Mercury) as a symbol of medicine, while most other civilized nations correctly prefer the Staff of Aesculapius.



THE STAFF OF AESCULAPIUS



THE STAFF OF HERMES (OR MERCURY)

ROBERT EDGAR MITCHELL, JR., M.D.

Ye Olde Socialized Medicine

MANY CRITICS OF AMERICAN MEDICINE would like to have the British version of socialized medicine saddled upon the American people. Perhaps they have a point after all. A vignetté of present day medicine in England was brought back by a patient a few days ago. Just before leaving Richmond for a two week stay in London, she struck her shin on the edge of a piece of furniture and received a ragged triangular laceration. The area was cleansed and closed by seven sutures.

Shortly before she returned to Virginia she inquired at the desk of the hotel in which she was staying as to where she could find a physician to change the dressing and remove the stitches. She was duly directed to the office of a nearby physician. He turned out to be a middle age man of distinguished mien. He wore a dark, sack coat, a pearl gray waistcoat and striped trousers. The office itself had a comfortable, seedy, rundown appearance. A wide space in the hallway served as a reception room. The only other occupant was a detail man who was waiting to extol the virtues of an American drug. The furniture and equipment reminded the patient of a medical exhibit she had seen that portrayed a doctor's office at the turn of the century.

The chief item of interest in the examining room was a large rolltop desk. There was one electrical outlet in the center of the room from which wires radiated to various other electrical gadgets and the ubiquitous heater. After picking her way cautiously through these wires which formed a veritable network of booby traps, his patient reached the examining table which was situated on the lee side of the rolltop desk.

The surgeon evidently belonged to the school of the long robe for he directed the patient to remove the dressing herself. After the wound was exposed he cleaned up the incision with a piece of Kleenex. He then disappeared into an adjoining room and reappeared with forceps and scissors of undetermined vintage and uncertain sterility with which he succeeded in removing the sutures. The final transaction was the presentation of his statement which read as follows:

"163,2023
520,6069

Residence
423,2790

_____ Great Cumberland Place
London, WHI 8DL

19th November 1969

Dr. _____ _____ presents
his compliments to
Miss _____ _____

and begs to state that his fees
for professional services amount
to

£4. 4s. Od.

Removal of stitches 19.11.69.

Miss _____ _____
Room 222
Cumberland Hotel
London, W.1.

Received
£4. 4. Od.
with thanks
_____ _____
Secretary

No receipt will be sent unless requested."

He may not have been a master surgeon but he had a keen eye for a fast buck. Four guineas are four guineas regardless as to how devalued the pound may be. Ten dollars and eight cents was not bad for the removal of seven sutures. Perhaps, after all, we could learn more from the British than we realized. Easy hours, lots of pay and just a little Kleenex.

H. J. W.

News . . . .

Calendar of Events

Annual Medical Seminar—Sponsored by University of Virginia School of Medicine—The Homestead—Hot Springs—January 29-31, 1970.

Law Institute on Hospitals and Medicine—Medical College of Virginia—Richmond—February 6, 1970.

Clinical Microbiology Conference and Workshop—University of Virginia School of Medicine—Charlottesville—February 6, 1970.

Alton D. Brashear Postgraduate Course in "Head and Neck Anatomy"—Medical College of Virginia—Richmond—February 17-20, 1970.

Stoneburner Lecture Series—Medical College of Virginia—Richmond—February 19-20, 1970.

Student Cancer Day—University of Virginia School of Medicine—Charlottesville—March 6, 1970.

Annual Postgraduate Program—Sponsored by Medical Staff of Roanoke Memorial Hospital—Roanoke—March 19-20, 1970.

Spring Series of Thursday Afternoon Lectures—University of Virginia School of Medicine—Charlottesville—March 5-April 23, 1970.

Cardiac Symposium—Sponsored by Heart Association of Northern Virginia and Washington Heart Association—Marriott Twin Bridges Motor Hotel—Arlington—April 8, 1970.

Annual Postgraduate Course—Sponsored by Staff of Gill Memorial Eye, Ear, Nose and Throat Hospital and Clinic—Hotel Roanoke—Roanoke—April 12-15, 1970.

Virginia Academy of General Practice—Annual Scientific Assembly—Hotel Roanoke—Roanoke—May 6-10, 1970.

International Cancer Conference—Sponsored by International Union Against Cancer—Houston, Texas—May 22-29, 1970.

Child Psychiatry Spring Forum—Medical College of Virginia—Richmond—May 29, 1970.

Seaboard Medical Association—Nags Head, North Carolina—June 18-21, 1970.

American Medical Association—Annual Convention—Chicago—June 21-25, 1970.

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following new members were received into The Medical Society of Virginia during the month of November:

Charles J. Blair, M.D., Richmond
Joseph H. Callicott, Jr., M.D., Lynchburg
Merrill S. Climo, M.D., Annandale
Peter C. Conlon, M.D., Richmond
James N. Cooper, M.D., Annandale
Robert B. Eggleston, M.D., Harrisonburg
William W. Ellis, M.D., Winchester
Adel B. Guirguis, M.D., Winchester
Imran Hatiboglu, M.D., Bristol
Beverly Jones, M.D., Richmond
David A. Layman, M.D., Hopewell
Boyd H. May, Jr., M.D., Richmond
Read F. McGehee, Jr., M.D., Richmond
Peter J. Nachajski, M.D., Alexandria
Robert E. Pooley, M.D., Roanoke
Guillermo Schrader, M.D., Norfolk
Daniel L. Seale, M.D., Charlottesville

Prince William County Medical Society.

Officers for this society for the year 1970 are: president, Dr. George Berberian, Manassas; vice-president, Dr. Bradford S. Bennett, Manassas; secretary, Dr. John Greenhalgh, Dumfries; and treasurer, Dr. Charles Rathke, Manassas.

Dr. Richard E. Palmer,

Alexandria, has been honored with the title of "Private Practitioner of Pathology" for 1969 by the American Pathology Foundation.

Dr. James Edwin Wood, III,

Has been named director of the Department of Medicine of Pennsylvania Hospital, Philadelphia. He has also been named Professor of Medicine at the Medical School of the University of Pennsylvania.

Dr. Wood was formerly associate dean of the School of Medicine and Professor of Medicine at the University of Virginia, Charlottesville.

Dr. Frank E. Handy,

Appalachia, has been presented a certificate of appreciation and a pin for twenty-five years of service as medical advisor for Local Board No. 127, Norton City and Wise County.

Dr. William P. Fletcher,

Recently of Covington, is now located for practice in Harrisonburg. He had been in Covington since 1958.

Dr. James K. Morrow,

Radford, has retired after twenty-seven years of service at St. Albans Hospital. He will continue to serve as secretary of the board of directors.

Dr. and Mrs. Morrow plan a trip to Florida and arrangements are complete for their 15th Caribbean cruise on January 15th.

Dr. Charles E. Troland,

Richmond, has been named "Boss of the Year" by the Old Dominion Chapter of the National Secretaries Association.

Dr. H. B. Showalter,

Kenbridge, has been cited as "The Outstanding Citizen of the Year" by the Woodmen of the World Camp 321.

Medico-Legal Workshops.

The first of three medico-legal workshops investigating current medical examiner problems, drug abuse, and sudden and unsuspected causes of death was held in Arlington in November. The second one is to be held in January at Virginia Beach and the third in March at Roanoke. They are being conducted by the Office of the Chief Medical Examiner, Richmond.

Sponsors for the workshops are the De-

partment of Legal Medicine at the Medical College of Virginia, the Office of the Chief Medical Examiner, the Virginia Society of Pathology and the Virginia Academy of General Practice.

The Virginia Association of Medical Assistants

The Virginia Association of Medical Assistants, of which we doctors can be justly proud, has just completed the most successful year in its history under the capable guidance of its retired President, Mrs. Evelyn Camper of Norfolk.

Among the highlights of this year was the national meeting in Honolulu, attended by fifteen members of the VAMA. At this meeting, our own Ruth Dize of Norfolk, a Past-President of VAMA, was installed as President of the American Association of Medical Assistants.

Mrs. Lonie Kanak completed her first year on the Board of Trustees of the American Association of Medical Assistants and, for the coming year, has been appointed Chairman of the Nominating Committee and the Resolutions Committee. It is indeed rare to have two members from one state listed among the national officers and I hope that this recognition will inspire more girls to join the local, state, and national organizations.

The Virginia Association of Medical Assistants held its annual meeting at the Hotel Roanoke, November 7-9, with the election of the following officers: President—Mrs. Jean Pair, Jarratt; President-Elect—Myra Durrance, Portsmouth; Vice-President—Mildred Ovens, Petersburg; Secretary—Frances Sheets, Petersburg; Treasurer—Martha Welch, Roanoke. I would like to add that Mrs. Martha Welch is a Certified Medical Assistant having passed the National Certifying Board.

Doctors: These girls deserve all the financial and moral support you can give them so that the Virginia Association of Medical Assistants, in 1970, will grow in size and prestige and come back from the 1970 meeting in Des Moines with additional honors.

John Wyatt Davis, Jr., M.D.
AAMA Advisor

Kidney Exchange Program.

Seven university medical centers—the University of Virginia, Medical College of Virginia, Johns Hopkins University, Duke University, Emory University, University of Maryland and the University of North Carolina—have joined in a computerized kidney exchange program aimed at making more kidneys available for organ transplantation. The program is co-directed by Dr. Leslie E. Rudolf, University of Virginia, and Dr. David Hume, Medical College of Virginia.

Wanted.

Internist, board qualified or certified, to join board certified internist in East Tennessee town of approximately 50,000. Guaranteed salary and increasing percentage to full partnership. Accredited schools, local colleges and near University. Write to #170, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia 23221. (*Adv.*)

Wanted.

One or two general practitioners, service obligation fulfilled, to join established GP group. Local hospital. Population 20,000. Twenty-three miles from Richmond. Drs. Moore and Miller, 815 West Poythress Street, Hopewell, Virginia 23860. Telephone 458-8557. (*Adv.*)

Wanted.

Emergency Room Physician, Virginia license necessary. Minimum annual guarantee. Contact James A. Miller, M.D., Winchester Memorial Hospital, South Stewart Street, Winchester, Virginia 22601. Phone 703-662-4121. (*Adv.*)

Obituary....

Dr. Hunter Holmes McGuire,

Richmond, died November 6 after a long illness. He was seventy-four years of age and received his medical degree from the University of Virginia in 1920. Dr. McGuire had been a member of the staff of McGuire Clinic and St. Luke's Hospital for forty-five years, retiring in 1967. He had been a member of The Medical Society of Virginia for forty-eight years.

His wife, two sons and a daughter survive him. The sons are Drs. McGuire, Jr., of Richmond, and Lockhart Bemiss McGuire of Charlottesville.

Dr. William Nicholas Botts,

Big Stone Gap, died October 30 at the age of eighty-nine. He was a graduate of the University of Louisville School of Medicine in 1907. Dr. Botts practiced general medicine in Wise County for 12 years before becoming a specialist in eye, ear, nose and throat. He then practiced for thirty four years in Appalachia and 14 years in Big Stone Gap before retiring in 1968. Dr. Botts was a lifelong Mason and Shriner and a member of the Kazim Temple of Roanoke. He had been a member of The Medical Society of Virginia for thirty years.

His wife and two sons, Drs. Botts, Jr., and Stanley Botts, survive him. A brother is Dr. George W. Botts of Norton.

Dr. James Henry Roberts,

Roanoke, died October 30. He was eighty-seven years of age and a graduate of Howard University in 1910. Dr. Roberts was a co-founder of Burrell Memorial Hospital and was the oldest practicing physician on the staff. He had practiced medicine in Roanoke for fifty-eight years. Dr. Roberts had been a member of The Medical Society of Virginia since 1955 and was made a member of the Fifty Year Club in 1966.

Two daughters survive.

Dr. Neal.

WHEREAS, on October 5, 1969, death removed from our midst a truly dedicated physician, E. Berkeley Neal, M.D., of Roanoke; and

WHEREAS, Dr. Neal's contribution to his profession has been recognized by numerous bodies, including the Roanoke Academy of Medicine, the Virginia Pediatric Society, and The Medical Society of Virginia; and

WHEREAS, His capable leadership was evident as founder of the Children's Clinic and as President of the Virginia Pediatric Society; and

WHEREAS, Dr. Neal was beloved by all who knew him and by his patients whom he served so faithfully; therefore be it

RESOLVED, That the Roanoke Academy of Medicine express its appreciation of Dr. Neal's outstanding service to his community and to his profession; and be it further

RESOLVED, That the sympathy of this Society, as conveyed in this resolution, be extended to his wife and family.

T. J. HUMPHRIES, M.D.
ALLEN BARKER, M.D.
C. T. BURTON, M.D.

Dr. Dorsey.

It is with great sorrow that we record the passing of our esteemed colleague, Dr. Charles Welby Dorsey on August 2, 1969.

WHEREAS: Charles Welby Dorsey, M.D., Obstetrician and Gynecologist served for five years as a member of the John Randolph Hospital Medical Staff in a most effective and laudatory manner, maintaining the highest standards of the medical profession, and

WHEREAS: Dr. Dorsey has, during his five years on the Medical Staff of the John Randolph Hospital, loyally and faithfully served as Chief of Obstetrics in 1964 and 1966, Chairman of the Emergency Room Committee in 1965, and Chairman of the Dietary Committee in 1967 now, therefore be it

RESOLVED: That the John Randolph Hospital Medical Staff, in recognition of the faithful and loyal service rendered by Dr. Dorsey, expresses its appreciation and gratefulness and acknowledges Dr. Dorsey's knowledge of medicine and experience in the field, and be it further

RESOLVED: That we as members of the Staff of John Randolph Hospital express our great loss in his passing and wish to pay tribute to the memory of our co-member and that copies of this resolution be sent to his widow and The Medical Society of Virginia.

J. D. SKAGGS, M.D., *Chief Medical Staff*

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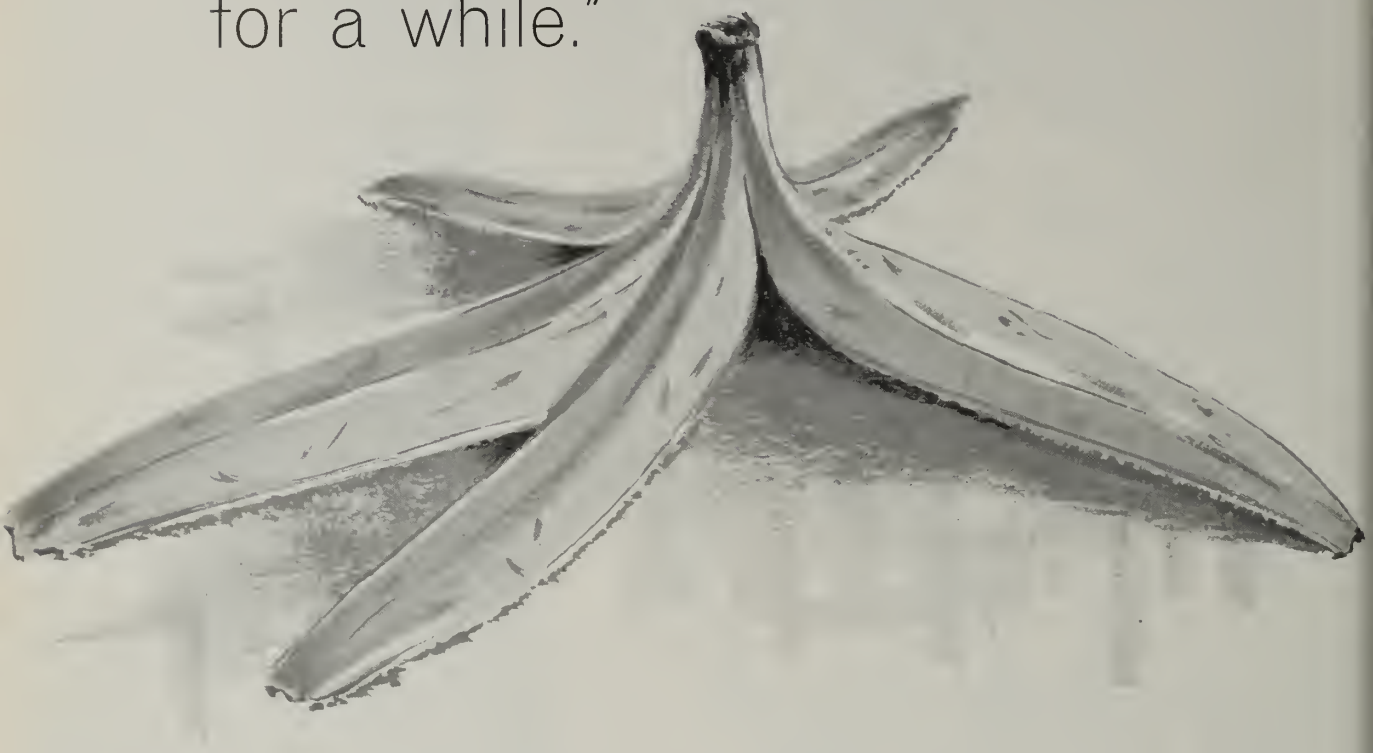
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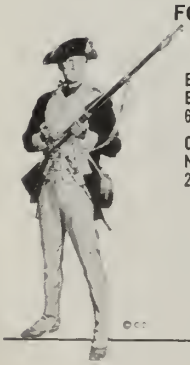
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symptoms of mixed anxiety-depression are rarely clear-cut...
but they are often a clear indication for

Mellaril®
(thioridazine)
25 mg. t.i.d.

effective in mixed anxiety-depression and in moderate to severe anxiety

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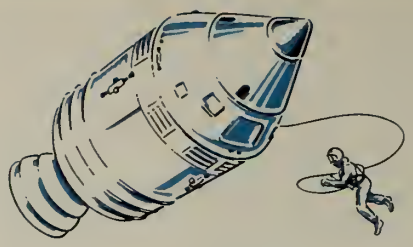
Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

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For protection of the inactive patient 1 or 2 tablets every 4 to 6 hours is usually sufficient to keep the urine clear, acid and sterile.

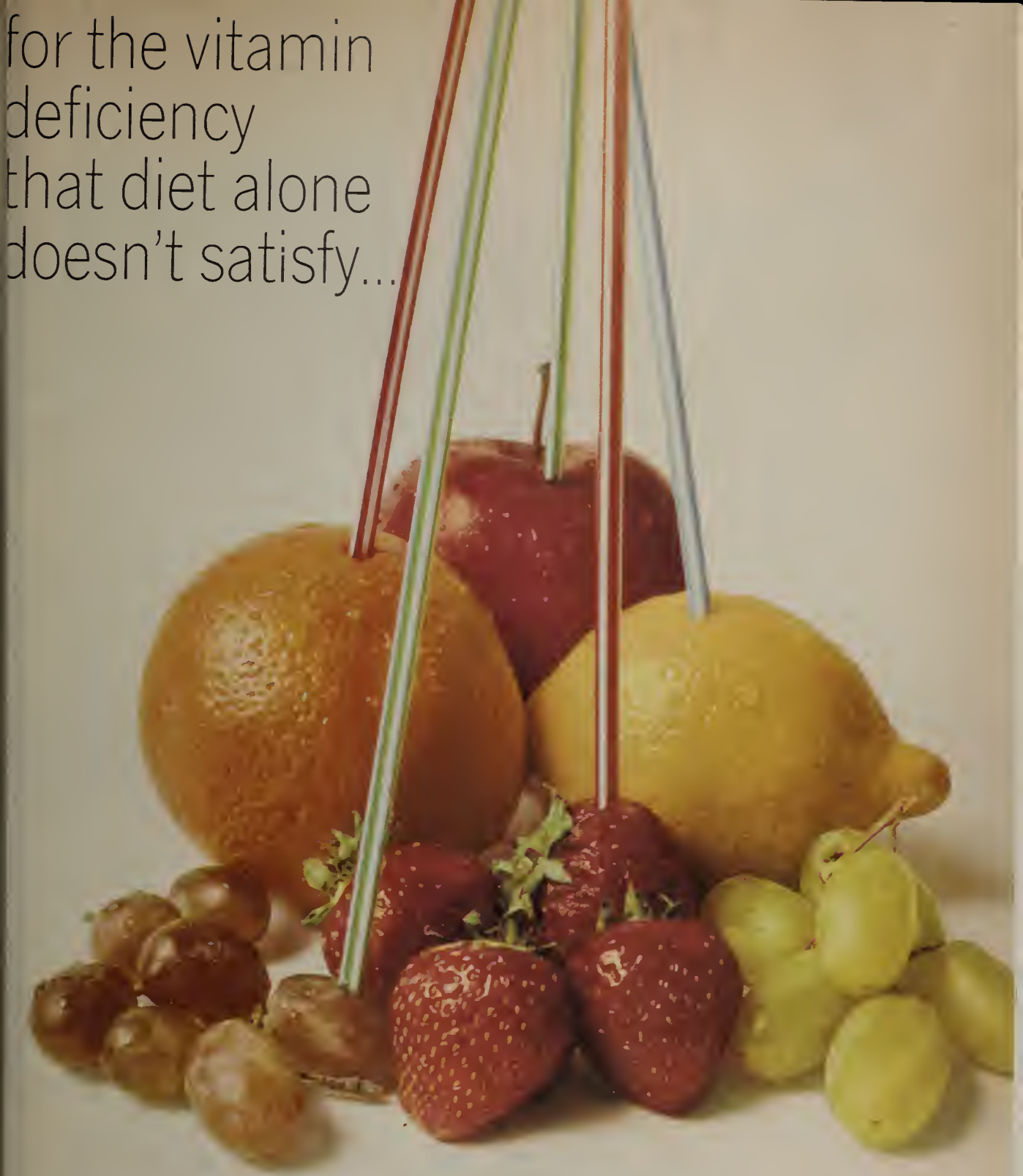
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traindication: History of hypersensitivity to demethylchlortetracye or nystatin.

rning: In renal impairment, usual doses may lead to excessive accumion and liver toxicity. Under such conditions, lower than usual doses indicated, and, if therapy is prolonged, serum level determinations be advisable. A photodynamic reaction to natural or artificial sunt has been observed. Small amounts of drug and short exposure may duce an exaggerated sunburn reaction which may range from erytna to severe skin manifestations. In a smaller proportion, photorgic reactions have been reported. Patients should avoid direct posure to sunlight and discontinue drug at the first evidence of skin comfort. Necessary subsequent courses of treatment with tetracyes should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

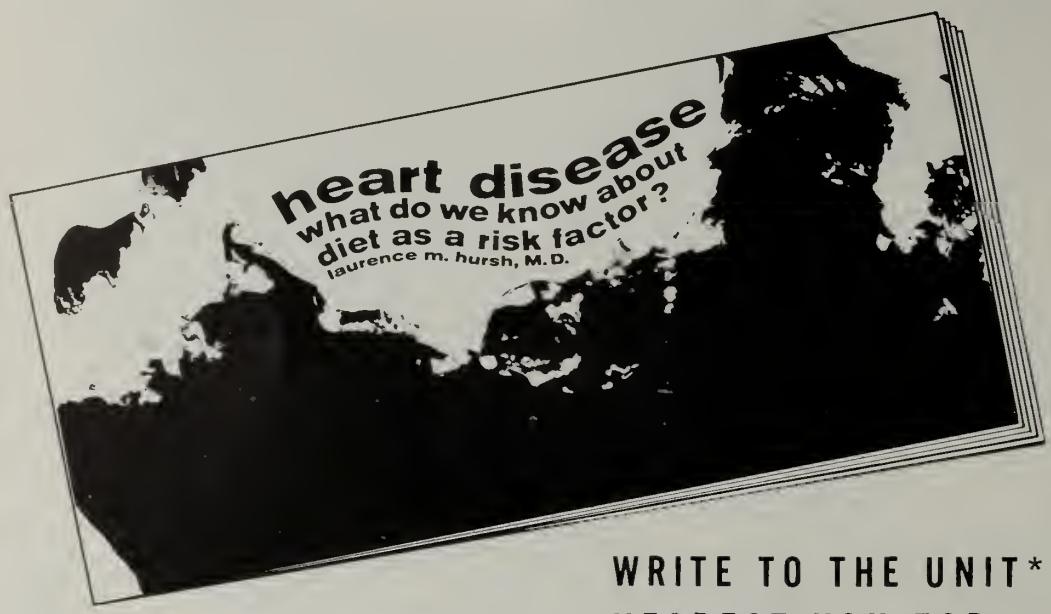
Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

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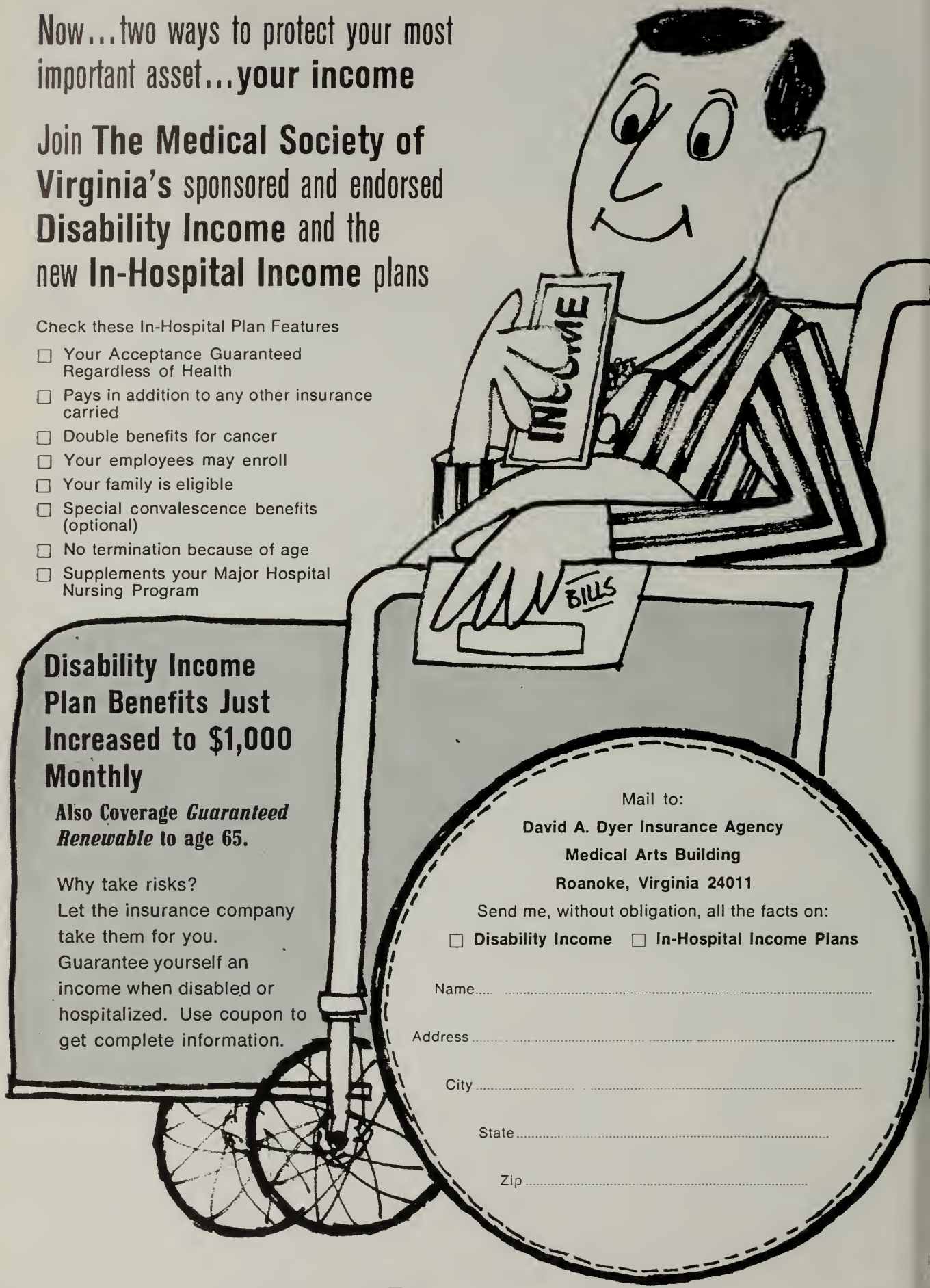
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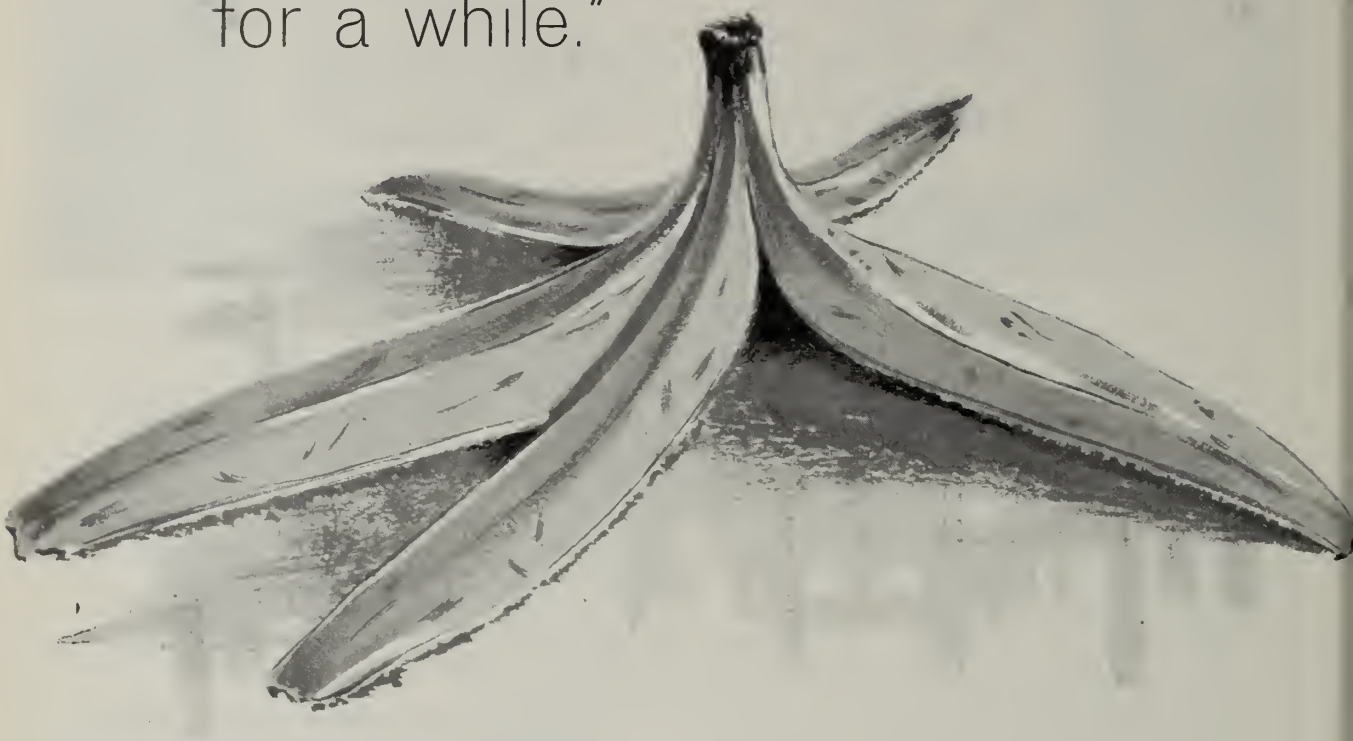
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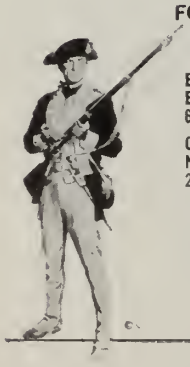
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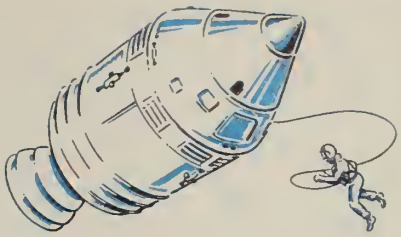
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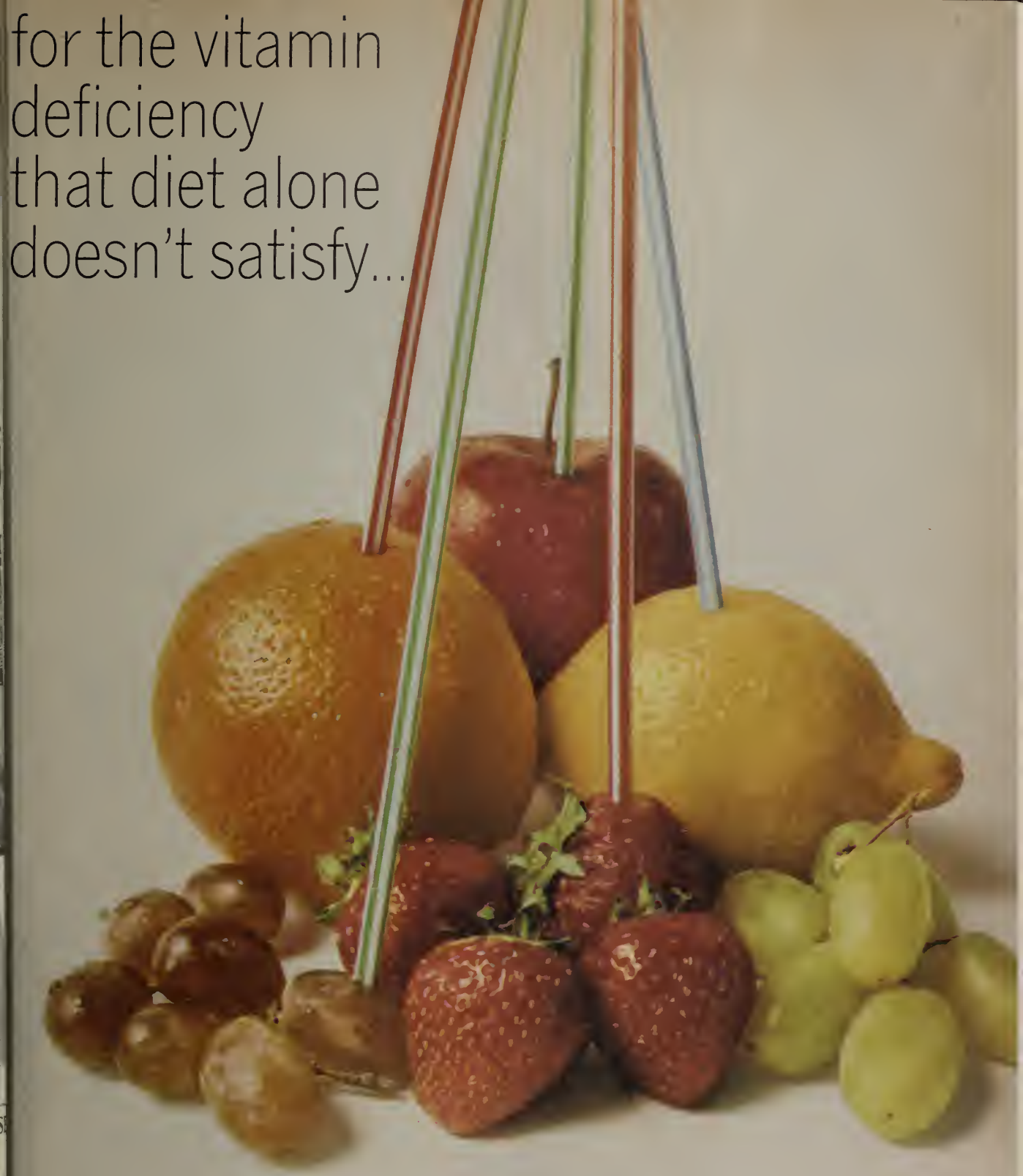
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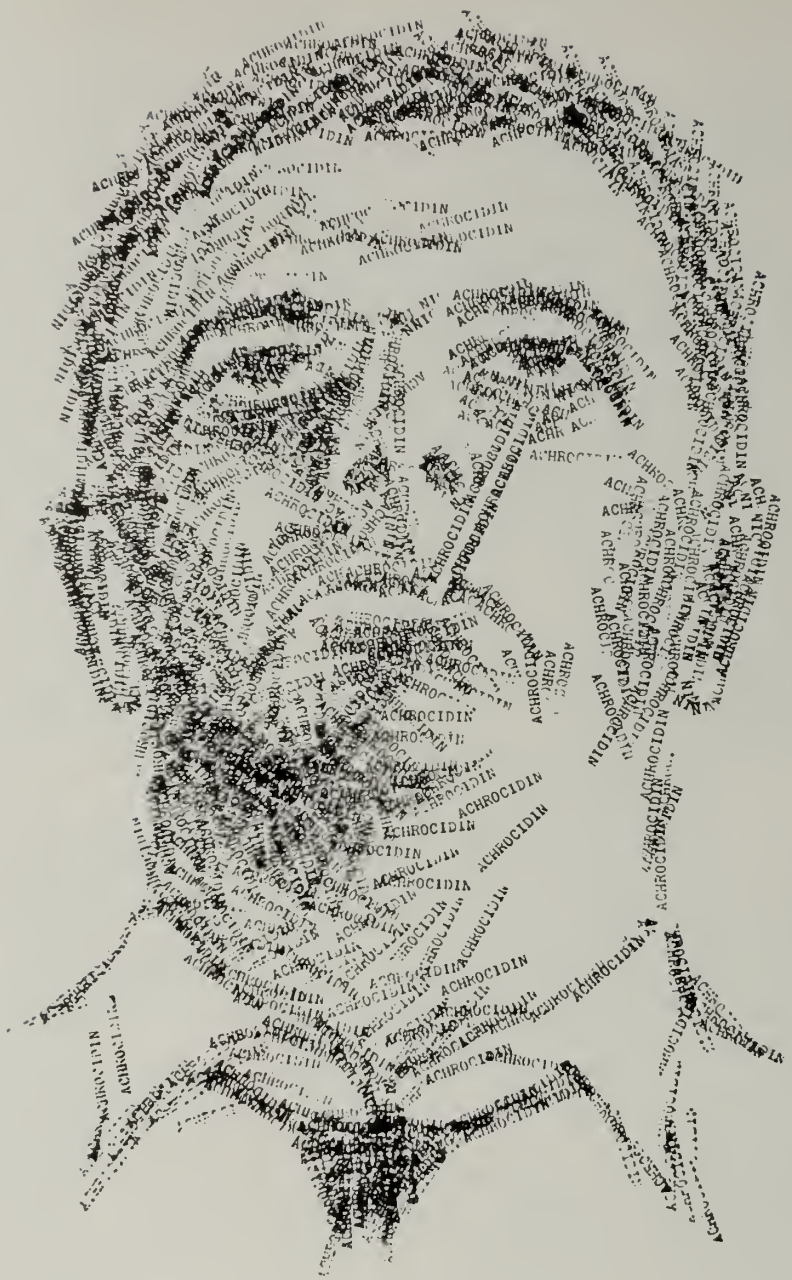
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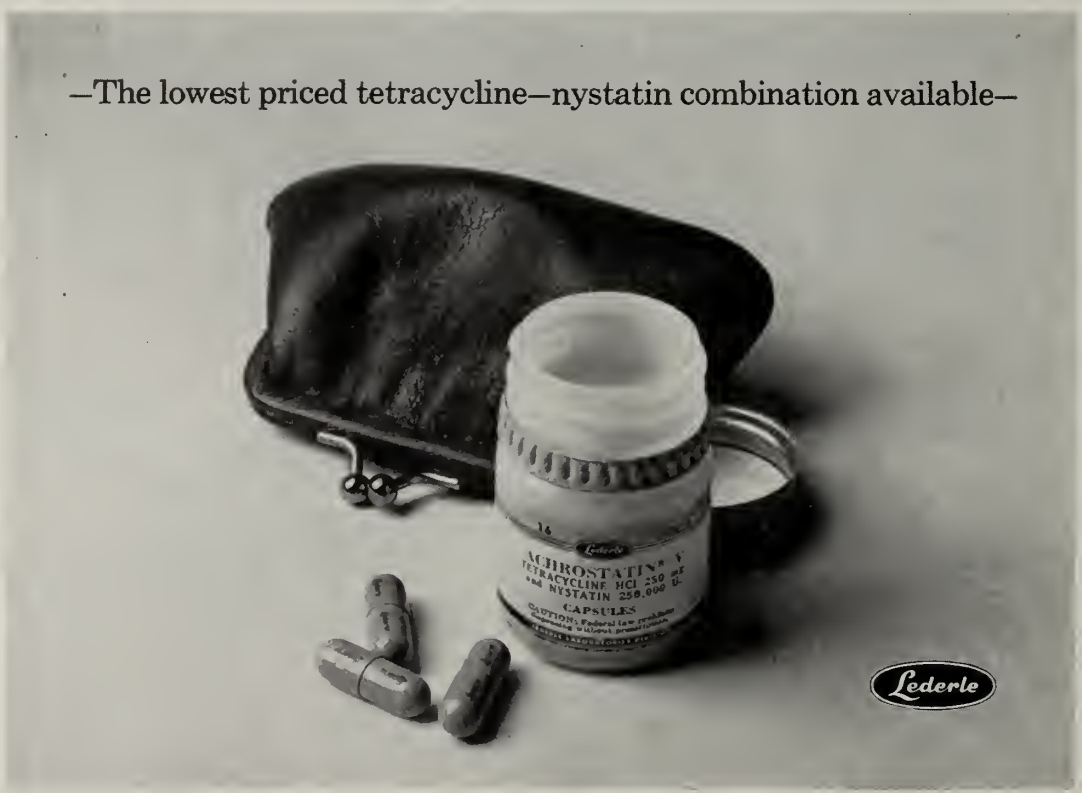
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The Virginia
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February, 1970
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Guest Editorial . . .

Where Shall He Come From?

IT IS SAID that people have certain rights, i.e., things they may properly claim as due them. What are these?

A famous document states "that all men are created equal, that they are endowed by their Creator with certain inalienable rights, that among these are Life, Liberty and the pursuit of Happiness." Some of these rights are difficult to define. For example, what is life?; and, on the contrary, what is death?; or, more significantly today, when are you dead?[1]

The Constitution gives every man the right to be represented by counsel in criminal cases. There is general agreement that everyone has the right of access to an education.

In his 1965 Message to Congress on Advancing the Nation's Health, President Johnson stated: "Our first concern must be to assure that the advance of medical knowledge leaves none behind. We can, and must, strive now to assure the availability and accessibility of the best health care for all Americans, regardless of age or geography or economic status." [2]

Since then we have been told that "as a society we have affirmed in presidential and congressional phrases the principle that a person has a right to high-quality medical care, easily accessible and readily available";[3] and "I put first the universal acceptance of the concept that health care is a *right* and not a privilege. This is being said frequently but perhaps not frequently enough, because many people have not fully comprehended the import of what we say. It was not too many years ago that when we listed the necessities of life, we said 'food, clothing, and shelter'. No sane or rational person would today give you a list of less than six: food, clothing, shelter, education, employment, and health care. In a sense we thereby have doubled within my life time the list of those things which we call the necessities of life, the *basic* necessities of life." [4]

In accepting the idea that health care of the first class is the right of everyone, we must keep in mind that "It is services, not manpower, that are demanded, supplied, and purchased." [5]

The present provision of these services leaves a good deal to be desired,

especially in the depressed areas of the cities and in small towns and rural communities. One cannot be sure whether the cause is too few providers, inefficiency of the system (or "non-system"), too many users, poor distribution, high costs, other factors, or combinations of these.

The questions are: How and where shall the needed services be provided, and by whom?

Efforts at Solutions

I. More services are being made available:

1. By increasing the numbers of the present types of personnel. For example, the number of American medical schools with students in attendance was 99 and the number of graduates was 8,059, in 1968-69, up from 76 and 6,796, respectively, in 1955-56.[6]

2. By increasing the efficiency of the present types of personnel: as in the organization of neighborhood health centers and the formation of group practices where personal and continuing care with emphasis on preventive medicine can be provided (opinions differ);[7,8] in hospital emergency rooms where well organized and experienced teams give to all comers on a 24-hour basis first-class care, available, accessible, and at a reasonable cost. Although a physician in this milieu is able to serve more patients better, this is little appreciated by the people of the area from which he entered emergency room practice, especially when no one takes his place; and in multiphasic screening programs especially developed by the Kaiser-Permanente Medical Center, whereby in several hours at a modest cost walking patients receive a battery of tests, the results of which are quickly available to the physician, thus allowing him to take care of more people, better, at less cost.[9]

3. By having other health personnel replace physicians: as nurse midwives, nurse anesthetists, and nurses in office and home practice. For example, it has been shown that in a properly organized physician-nurse group 22.5% of the total home visits and 13.5% of the total office consultations can be carried out by the nurse.[10] All these programs require nurses who are also in short supply.

4. By training new types of personnel as in the Physician's Assistant Programs at Duke University[11] and Alderson-Broaddus College, Philippi, West Virginia.[12]

II. Other Factors

Much has been said about the population explosion and the increasing demand for medical services by the recipients, as well as the true consumers, i.e., those who buy such services.[4,13] The latter

is well illustrated by the experience with Medicare, and most particularly the first six months of Medicaid in our own State.

No one seems able to do much to control either.

Distribution of health care personnel is receiving increasing attention; one hears a good deal about "drafting" providers to serve varying lengths of time in areas of need. Some consider it desirable to seek out students from deprived areas with the idea that they will return to serve in those areas.

All are concerned with the increasing costs of medical care, especially hospitalization.

Various planning programs, such as Regional Medical and Comprehensive Planning, are in their infancy here. Their eventual impact remains to be seen.

We see that these problems are attracting broad interest all over this country. Where do we turn in our own community? Obviously the actual health service can only be provided by specially trained and educated personnel, preferably under the direction of a physician. Therefore, the Richmond Academy of Medicine, District V of the Virginia Nurses Association, the Richmond Dental Society, the Richmond Pharmaceutical Association, etc., are primarily concerned.

The producers of health personnel, i.e., the Medical College of Virginia and its hospitals, and the *other hospitals* are vital participants. Increasingly the medical schools are being expected to plan and participate in programs of health care, above and beyond those sufficient for their teaching, training, and research needs.[14] In this connection it is interesting that the 1927 Committee on the Cost of Medical Care[15] had only eight medical school people out of fifty-six members, whereas the President's Commission on Heart Disease, Cancer, and Stroke[16] had thirteen such personnel out of twenty-eight.

Users have a major interest, whether as individuals or as representatives of communities or areas within communities. These representatives are often hard to identify and seldom vocal. For example, during a period of twenty years or so we attended the indigent and medically indigent of Richmond in the clinics and emergency rooms of the Medical College of Virginia, and in their so-called homes. Despite inadequate housing, clothing, fuel, food and water supply on the one hand and impersonal and spasmodic medical care, with long periods of waiting for short times of physician contact, on the other, we heard few, if any, complaints from the patients. Everyone else had a good deal to say.

Consumers or buyers of health services have a great deal at stake, whether as individuals, insurance carriers, industry, labor, or Federal and State governments (Medicare, Medicaid, and other programs).

Trying to plan ahead, assemble much needed data, and develop some kind of orderly solutions for these problems in our State, with local appli-

cations when feasible, are the Regional Medical Program; the Comprehensive Health Planning Council with its subdivision, the Capital Area Comprehensive Health Planning Council, Inc., embracing Area 15 as determined by the Division of State Planning and Community Affairs, i.e., the City of Richmond and the Counties of Henrico, Hanover, Goochland, Powhatan, Chesterfield, Charles City, and New Kent; the Virginia Council on Health and Medical Care; and The Medical Society of Virginia.

In short, all individuals and organizations have the responsibility for seeing to it that everyone gets the high-quality medical care which is his *right*. What is needed is leadership, or rather, a leader. Where shall he come from? We believe he is going to come from the Remnant.

In 1937 Albert Jay Nock published a piece called "Isaiah's Job" [17] from which we quote: "The Lord commissioned the prophet to go out and warn the people of the wrath to come. 'Tell them what a worthless lot they are,' He said. 'Tell them what is wrong, and why, and what is going to happen unless they have a change of heart and straighten up. Don't mince matters. Make it clear that they are positively down to their last chance. Give it to them good and strong and keep on giving it to them. I suppose perhaps I ought to tell you,' he added, 'that it won't do any good. The official class and their intelligentsia will turn up their noses at you, and the masses will not even listen. They will all keep on in their own ways until they carry everything down to destruction, and you will probably be lucky if you get out with your life.'

"Isaiah had been very willing to take on the job—in fact, he had asked for it—but this prospect put a new face on the situation. It raised the obvious question: Why, if all that were so—if the enterprise were to be a failure from the start—was there any sense in starting it?

" 'Ah,' the Lord said, 'you do not get the point. There is a Remnant there that you know nothing about. They are obscure, unorganized, inarticulate, each one rubbing along as best he can. They need to be encouraged and braced up because when everything has gone completely to the dogs, they are the ones who will come back and build up a new society; and meanwhile, your preaching will reassure them and keep them hanging on. Your job is to take care of the Remnant, so be off now and set about it.' "

" . . . in any given society the Remnant are always so largely an unknown quantity. You do not know, and will never know, more than two things about them. You can be sure of those—dead sure, as our phrase is —but you will never be able to make even a respectable guess at anything else. You do not know, and will never know, who the Remnant are, nor where they are, nor how many of them there are, nor what they are doing or will do. Two things you know, and no more; first they exist; second, that they will find you. Except for these two certainties, working for the Remnant means working in impenetrable darkness."

"The certainty that the Remnant will find him, however, leaves the prophet as much in the dark as ever, as helpless as ever in the matter of putting any estimate of any kind upon the Remnant; for, as appears in the case of Elijah, he remains ignorant of who they are that have found him or where they are or how many. They do not write in and tell him about it, after the manner of those who admire the vedettes of Hollywood, nor yet do they seek him out and attach themselves to his person. They are not that kind. They take his message much as drivers take the directions on a roadside signboard—that is, with very little thought about the signboard, beyond being gratefully glad that it happened to be there, but with very serious thought about the directions.

"This impersonal attitude of the Remnant wonderfully enhances the interest of the imaginative prophet's job. Once in a while, just about often enough to keep his intellectual curiosity in good working order, he will quite accidentally come upon some distinct reflection of his own message in an unsuspected quarter. This enables him to entertain himself in his leisure moments with agreeable speculations about the course his message may have taken in reaching that particular quarter, and about what came of it after it got there. Most interesting of all are those instances, if one could only run them down (but one may always speculate about them), where the recipient himself no longer knows where nor when nor from whom he got the message—or even where; as sometimes happens, he has forgotten that he got it anywhere and imagines that it is all a self-sprung idea of his own.

"Such instances as these are probably not infrequent, for, without presuming to enroll ourselves among the Remnant, we can all no doubt remember having found ourselves suddenly under the influence of an idea, the source of which we cannot possibly identify. 'It came to us afterward,' as we say; that is, we are aware of it only after it has shot up full-grown in our minds, leaving us quite ignorant of how and when and by what agency it was planted there and left to germinate. It seems highly probable that the prophet's message often takes some such course with the Remnant."

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What Is Emphysema?

W. TALIAFERRO THOMPSON, M.D.
Richmond, Virginia

For a number of reasons, precise diagnosis is desirable when dealing with this chronic pulmonary disease.

THE TERM EMPHYSEMA is one of the most controversial in general use in medicine today. The problems of differentiation and definition of emphysema are contentious and difficult. Perhaps in no other frequently encountered disease are there so many errors in diagnosis.

Most physicians consider that they have a pretty clear cut picture of the patient with emphysema. He has shortness of breath and may be cyanotic. He has an increased AP diameter of his chest, is using accessory muscles of respiration and is bending slightly forward in order to obtain maximum benefit from his ventilatory effort. He coughs, wheezes and produces sputum. Yet, while in general terms this describes the patient with emphysema, such a patient does not necessarily have emphysema and indeed, often does not have it.

The difficulty, of course, is that emphysema is not a clear cut disease entity with well defined etiologic factor or factors and well recognized pathogenesis and pathophysiology. As a result, the term emphysema is often loosely used to refer to a spectrum of diseases ranging from bronchial obstruction without parenchymal lung changes on the one hand to parenchymal lung changes without bronchial obstruction on the other. While the ends of the spectrum are easy to designate and differentiate, the grey central area with which clinicians are primarily concerned may have varying degrees of bronchial obstruction and lung destruction that may or may not properly be lumped under the general term of emphysema.

Furthermore, the many kinds of physicians who deal with this spectrum of diseases are apt to view emphysema from their particular vantage point of training, background, experience and interests, thus may focus on a single or several aspects of altered pulmonary function and not recognize the large picture.

The clinician is impressed with shortness of breath, wheezing, coughing, sputum production and diminished breath sounds. The radiologist is impressed by an increased AP diameter; the position of the chest in inspiration with horizontal clavicles and ribs and flat diaphragms, voluminous lungs and increase in retrosternal space; and by increased radiolucency and often loss of vascular markings, particularly in the periphery of the lung. The clinical physiologist is impressed by impairment of air flow especially in expiration; by reduction in maximum voluntary ventilation; by alteration in lung volumes and capacities, particularly with an increase in residual volume and functional residual capacity; by uneven distribution of air and blood in the lungs; and a decrease in diffusing capacity. The pathologist is impressed by enlargement of air spaces distal to the terminal bronchioles and by destruction of the alveolar walls.

In an attempt to clarify and resolve this confusion the American Thoracic Society and the World Health Organization, among others, have determined that emphysema is best defined in terms of tissue changes, that the use of the term emphysema should be

limited to the pathologic changes of enlarged air spaces and destruction of alveoli.

By this definition, emphysema is established definitively only by examination of lung tissue under a microscope. Emphysema, however, as a clinical concept is much too important in terms of human disease to be confined to the autopsy room. The term chronic obstructive lung disease may be used as an appropriate compromise to designate the broad grouping of clinical syndromes characterized by shortness of breath, wheezing, cough and sputum production. The term clinical emphysema should be used if, on the basis of all evidence at hand, the clinician feels that there is indeed enlargement of air spaces with destruction of lung tissue in addition to the evidence of obstructive lung disease. Often qualifying phrases such as chronic bronchitis or asthma may further delineate the clinical picture when added as diagnostic terms.

An emphasis on accurate and precise use of terminology is particularly necessary today with the general concern over air pollution and noxious inhalants, including tobacco smoke; with the rapid increase in incidence of chronic lung disease; and with the awareness of such medical matters by the general public. The term emphysema has an especial connotation for purposes of disability and compensation. Many individuals know the implication for irreversibility, progressive course, and poor prognosis. A patient with periodic asthma, or chronic bronchitis, or chest and lung changes that occur with age usually does not have destructive lung changes, and should not be labelled as having emphysema unless there is objective supporting evidence and his total clinical state has been carefully evaluated. Injudicious use of the term emphysema may render a distinct disservice to an individual and to society.

More recently, emphysema has been differentiated into two distinct pathologic types, centri-lobular and pan-lobular. In centri-lobular emphysema the primary destructive lesion is at the level of the respiratory bronchioles and there is always bronchiolar inflammation and scarring. This lesion is found predominantly in the upper zones of the lungs. In pan-lobular emphysema the entire acinus is involved, inflammation and distortion of bronchioles is inconspicuous, and the lower lung zones are more apt to be involved. The kind of careful study and techniques which identified these types of emphysema will put us further on the road to an understanding of etiology and pathogenesis which are the ultimate essentials in dealing effectively with emphysema.

Granted, emphysema is primarily a disease of the city dwelling, cigarette smoking, middle-aged male. But there are many city dwelling, cigarette smoking, middle-aged males who do not have emphysema. Why do some individuals tolerate the noxious fumes which are the hallmark of industrial progress, and smoke cigarettes with impunity; others wheeze, cough and raise sputum but have no further difficulty; others wheeze, cough, raise sputum and have minor shortness of breath but otherwise do quite well; while yet others wheeze, cough, raise sputum become increasingly handicapped by shortness of breath and progress to extensive lung damage and death?

It is apparent that morphologic emphysema is made up by a number of different diseases with various causes, sub-causes, and combination of causes. Recently emphysema has been reported with an increased incidence in certain families and appearing in youngish women who have not smoked and who have had little evidence of bronchitis before the onset of the disease. A congenital absence of alpha I anti-trypsin has been demonstrated and the pathology is primarily of the pan-lobular type with little involvement of bronchioles. Presumably this, and probably other kinds of emphysema are heritable in origin with the primary difficulty being related to an abnormality of lung tissue.

Gough has emphasized the vulnerability of the respiratory bronchiole to inhaled irritant substances, and a variety of inhaled irritants are associated with an increased incidence of centri-lobular emphysema. The primary lesion of emphysema has also been postulated to be vascular with infarction, degeneration, and ultimately fibrosis.

The clinical manifestations of emphysema are determined by two processes which are not necessarily dependent on one another, progressing in varying degrees of severity and rapidity: bronchial obstruction and alveolar destruction. This is the basis for the characterization of patients as pink puffers and blue bloaters. The pink puffer has severe anatomic emphysema with suppression of breath sounds; marked impairment of diffusing capacity; shortness of breath which is slowly progressive from year to year; little evidence of bronchitis or bronchial obstruction; fairly normal arterial blood gases which are maintained by marked increase in work of respiration, weight loss, and x-ray evidence of large lungs, increased radiolucency, small cardiothoracic ratio and low flat diaphragms.

The blue bloater has litte evidence of anatomic emphysema for there are normal breath sounds; lungs are not voluminous; there is no increased radiolucency; there is marked disturbance in air flow with little reduction in diffusing capacity; and shortness of breath is quite variable from time to time, fluctuating with cough and sputum production.

Very few patients fit neatly or exclusively in either of these categories. Most patients are mixtures of these two types, and may convert from one to the other depending upon the presence of infection and heart failure. Nevertheless, this classification provides a useful clinical concept for planning a therapeutic regimen. Intensive treatment of the patient with bronchial obstruction may tide him over a critical period of respiratory failure and restore him to the disability level occasioned by the degree of lung destruction. We have had the opportunity of following a patient who in 1958 had a PO_2 of 58 and PCO_2 of 45. Over the past ten years, he has had a gradual deterioration, but his PO_2 has been recorded as high as 70, and his PCO_2 as low as 42. During the intervening years he has had numerous bouts of explosive respiratory failure characterized by a PO_2 in the twenties and thirties, and a PCO_2 in the seventies and eighties. Vigorous treatment of his bronchial infection and careful, meticulous attention to his levels of oxygenation and ventilation have tided him over one crisis after another. On the whole, he has done fairly well.

The clinician in his office and at the bedside, by intelligent use of all available data including history and physical examination, radiologic studies and pulmonary function testings, must determine the character and extent of altered physiology, and must attempt to predict the pulmonary pathology which is present which is causing the disturbance in function, i.e., the part that bronchial obstruction and lung destruction are playing in the patient's clinical picture. This is the essential for establishing a diagnosis in a patient with chronic lung disease, and is the base upon which one builds an understanding of the disease and from which stem rational treatment and prognosis.

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The Adolescent in Today's Society

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The more that is known about adolescents and their diseases, the better will be their medical care. Fifty per cent of the population is twenty-five years of age and under.

ADOLESCENTS ARE DIFFERENT! The approach to the adolescent differs from the approach to children or adults, During this period of life the physiological and psychological characteristics and needs are of utmost importance to the doctor working with his patient, for it is the combination of these characteristics and needs that makes an adolescent an individual. What is adolescent medicine? It is more of a general approach to this individual. The two chief purposes of adolescent medicine are first, to discuss and understand those illnesses that are peculiar to the adolescent, specifically problems of growth and development. Second, it is important to take the adolescent himself, his characteristics, his hopes, and his fears into account in treating *him* not just his illness or disease process. The requirements for the physician who works with the adolescent, and this can be any physician regardless of specialty or interest, are not only to understand the nature of the disease processes and injuries, but also to understand people and their environment.

In the past few years medicine has become specialized to the point that some medical training centers are becoming system-oriented in their approach to illness. In these centers people are being treated in relation to their circulatory or nervous systems. The practice of medicine, on the other hand, appears to be directed to age groups. The pediatrician has developed clinics for children from birth to 12 to 14 years of age. The internist has set up clinics for the adult and geriatric patient. Certainly not all practices are set up like this, nor is it always desirable. The general clinic devoted to the care of a single age-group fosters a physician's tendency to look at his patient as a whole and not necessarily the disease alone. In most adolescent clinics, the general age group we are talking about is from 12 to 21 years of age.

In dealing with any patient it is equally important to be aware of what has gone on before the patient comes to see you and what will transpire in his life after he leaves your care. Pediatricians, for instance, are interested in the pre-natal, post-natal and early developmental milestones in the care of their patients. Physicians caring for the adolescent must understand athletic injuries, blood pressure changes, anxiety states, adjustment reaction, diabetes, obesity, and dysmenorrhea in terms of what effects these problems will have on the adolescent, as well as the adult life that follows. This in essence, therefore, is not only the practice of medicine, but the art of medicine as well. It is this art of medicine that is truly the human side and what we in adolescent medicine strive to achieve.

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sor of Social Medicine, Harvard Medical School, suggested that, and I quote, "I want, everyone wants a doctor, a nurse, a someone who is interested in us . . . not only our blood chemistry . . . but someone who will talk to us, someone whom we can trust, someone who will help us to understand what we must do to stay well." This is particularly true in the adolescent age group.

Until recently there were very few medical centers with hospital facilities for adolescents. Now there are adolescent clinics in most major teaching hospitals, and a few doctors in the practice of adolescent medicine exclusively. The medical school arrangement provides for communication among physicians who care for both younger and older people. This setting also provides an ideal situation for training the undergraduate and postgraduate nurse and medical student, and those students and faculty engaged in research directed at adolescent disorders.

The more that is known about adolescents and their diseases, the better will be their medical care. It is to this end that the new services of adolescent medicine at the Medical College of Virginia were begun in August, 1968.

The need for such services becomes even more important when we consider that recent statistics suggest that by 1970 approximately 50% of our population will be 25 years of age and under. The individuals represented by these figures have the same medical, social, emotional and educational needs as adolescents of preceding generations. It is these needs, and how they are being met in today's society, that will be brought out.

Six thousand years ago an Egyptian priest carved on stone: "Our earth is degenerate, children no longer obey their elders." This statement represents rebellion . . . a common part of adolescent development behavior. It is also a lament that has been repeated throughout the ages by parents. In our present society we need more than ever to stop complaining about the youth, rather to plan and develop programs to help them develop responsibility. In order to develop programs it is important to look at the adolescent in our society, first, and then for you to decide what programs are pertinent to your local community.

What makes the adolescent so special? The tasks facing each adolescent in reaching maturity are essentially unchanged, namely, to free himself from dependence on his parents and be treated as a separate person; to learn self-control; to learn how to deal with authority, with hypocrisy; to develop a mature sexuality; to find a way of feeling adequate and wanted by friends and family; and to evolve a set of values. Only the process by which these tasks are accomplished changes.

There are numerous factors in our complex and accelerating society that influences this process . . . perhaps negatively, perhaps positively, some of them are our affluence, the new morality, the mass media, the drug scene, and the effectiveness of communication between youth and his elders, just to mention a few. This will bring out mainly the negative aspects of these various factors as they influence our young people.

Affluence has brought more free time, personal possessions, and greater educational opportunities. With free time comes boredom. Adolescents have an unlimited amount of energy to expend and characteristically they look for exciting ways to get rid of this energy. The once constructive forms of activity usually identified with rural living are now replaced by the confusion of the megalopolis. Their behavior, consequently, takes the form of fads, rock and roll music, long hair, drugs, political protests, and combinations of all of these. For most adolescents, this is only a transient fascination. More than a few, however, have become so involved with this way of life that they have lost sight of the ideal originally motivating them. The life they have chosen is in reality a life of protest and becomes self-defeating.

Certain elements in the mass media of television and radio, peer groups and commercial groups are constantly bombarding youth with ideas and messages of violence, free expression of sex, soft selling of all kinds of foods, toys, and clothes. We should be especially cognizant of the "pleasure at all costs" and anti-intellectual attitudes appearing in some mass media programs. This is not to imply that all the influences in the mass media are negative, but those negative influences that do exist cannot help but have an effect on the developing character of the adolescent. It is encouraging to see progress being made in several areas as evidenced by the development of better educational programs for television and more education stations.

This leaves parents, school and churches with even greater responsibilities of maintaining their influences in helping youth develop constructive attitudes. It is indeed sad that many of these institutions have not developed programs that seem relevant to our bright well-educated youth. They have not learned to give them the responsibilities and challenges to meet their abilities. Too many students feel they are "marking time" in school. In so many instances, we encourage our youth to work for grades rather than understanding.

If those in positions of responsibility let our adolescents pass through the early formative years accumulating material possessions, and being pressured by negative Madison Avenue advertising, then they fail to develop positive attitudes, habits, and, perhaps more important, motivations. The result in later adolescent years can be, and has been apathy and confusion.

The "new morality" is being discussed in great depth these days. It has various meanings to be sure, but to the youth, it generally refers to sexual practices and the unlimited freedom to express their sexual desires. To other students it refers to questions of traditional morality . . . what should be changed and what values are still pertinent to today's society.

Those who propose unlimited freedom of expression are perhaps questioning their elders on what they "preach and practice". They see a great deal of hypocrisy and lip service in their elder's values and morals. Those who are protesting about the older forms of morality are actually asking if we have any standards and values worth defending. Unfortunately, their choice of morality is resulting in increasing numbers of illegitimate babies and spiralling rates of venereal disease. It is doubtful that the question of where the responsibility for such behavior lies was ever considered in their earlier years of formal or informal education. In discussing the new morality with my patients and students, it is the issues and interpersonal relationships the youth of today really want to discuss. Far too often the anatomical and physiological functions are the only part of sex education explained, and this is usually in vivid detail and living color.

The "drug scene", as a form of protest, is the most hazardous—not only to the body but to the mind. One of the main points of contention for the youth is the disagreement with and protest about the laws regarding marijuana. Unrealistic though they may be, the fact remains that the illegal and illicit use of any drug distorting the mind is of doubtful benefit to anyone.

The lack of communication between youth and their elders is not new. In our schools students are finding fewer opportunities of discussing issues with those people to whom they look with respect. This is due in large part to overcrowding in class rooms, more mechanical teaching devices, the increasing administrative and research demands for teachers and professors.

In order for students to formulate their own ideas, there must be direction, encouragement, and intellectual stimulation from their elders. There is no substitute for wis-

dom. One of the more disturbing consequences of all these factors is the conviction that the only way to change school policies, laws or customs is the right to use physical force. The sit-in demonstrations, heckling of public officials, riots on college campuses are all examples of protest. Youth can be taught to disagree without burning and violence; further, that differences of opinion can be settled without using force.

To many, the adolescent has been considered a public nuisance. If this attitude prevails, more sub-cultures, such as the hippie movement and the drug scene, will surely evolve. We are not faced with a problem of surviving this period called adolescence, but one of helping them become involved with the essential issues. This involves applying principles that speak for themselves. If the younger years have been characterized by a stable family, warm and loving relationships, then these principles will be easier to follow:

"1. Listen to Them. Recently a very intelligent youth expressed himself in this way "Many young people would be more eager to assume an active societal role if only the older members of society would *speak with them* and *not simply to them*."

2. Give Them the Facts. No matter what the issues are, no matter how controversial it may be, there is no excuse for withholding the truth.

3. Trust Them. They may not always deserve it, but they will become much more responsible much quicker if trusted rather than being watched or mistrusted.

4. Be Consistent. It is important at any age, but particularly so at adolescence, for the young person to know what he can get away with and what he cannot get away with and certainly the reasons why.

5. Maintain Firm and Friendly Discipline.

6. Train Students for Independence in Every Way Possible.

7. Remember Your Own Feelings During Adolescence.

8. Set Limits. Set limits and enforce them, but never make a promise you cannot keep or a threat you cannot enforce. Standards should be enforced flexibly and firmly, not rigidly and without reference to the issue at hand.

9. Avoid Setting Group Against Group. It is of no consequence if this be one racial group against another, teacher against students or one ethnic group against another ethnic group. The conflict should be between good ideas and inferior ones. The question is not *who* is right, but *what* is right.

10. Exhibit Standards of Good Taste and Behavior. It is of the utmost importance that these standards are those that you would like adolescents to emulate, but don't demand agreement from them." [2]

In summary then, the problems found in developing programs for your adolescents are essentially the same as in the past. There is one decided difference, however, the adolescent's problems are society's problems today. If we hope and want a better tomorrow, then we must begin to solve these problems now. Our adolescents want to know where we, as parents and teachers, stand on all the issues. They must sense some strength and consistency in us as elders, even in principles with which they disagree. Surely, we are all limited by our own inadequacies, but this does not mean we should be afraid to define and clarify our faulty value-systems honestly.

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Zollinger-Ellison Syndrome and its Variants

Analysis of 8 Cases with Review of the Literature

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A description of experience with the Zollinger-Ellison syndrome, with particular emphasis on clinical features not so widely recognized, newer methods of diagnosis and analysis of radiological features.

THE ORIGINAL DISCOVERY of an association between pancreatic islet cell tumor, gastric hypersecretion, and severe peptic ulcer diathesis was one of the milestones in clinical medicine that stimulated clinicians and investigators alike. Since the original description of this syndrome by Zollinger and Ellison[1] numerous studies have reported additional interesting clinical and radiological features as well as the underlying pathophysiological mechanisms responsible for the symptom complex. The discovery of gastrin and its relationship to gastric secretion, the concept of multiple endocrine adenomatosis and the frequent incidence of steatorrhea with elucidation of underlying mechanisms are a few examples of this progress. These and other interesting facets of this syndrome have contributed to a great intellectual venture between the basic scientist, internist, radiologist, and surgeon. The present report describes our experience with the Zollinger-Ellison syndrome, with a particular emphasis on some interesting clinical features not so widely recognized, newer methods of diagnosis, and a detailed analysis of radiological features.

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Case Reports

Case No. 1—E.S.

This 28 year old white male was admitted to the hospital with the history of watery diarrhea of five months duration associated with a 20 lb. weight loss. Physical and laboratory examination on admission were unremarkable. Upper G.I. series revealed marked mucosal coarsening of the small bowel.

A month later the patient was readmitted with recurrent diarrhea and sharp epigastric pain, relieved by antacids. The liver edge was palpable 6 cm. below the right costal margin. Upper G.I. series showed prominent coarse duodenal folds. In the hospital the patient developed melena associated with persistent abdominal pain, nausea, and vomiting. He was explored because of the persistent epigastric pain and hepatomegaly. At surgery a large unresectable pancreatic carcinoma was found. No gastric surgery was done.

Following surgery he had recurrence of the same symptoms, complicated by massive gastrointestinal hemorrhage, intractable shock, and death.

Postmortem examination revealed in addition to the non-beta islet cell tumor of the pancreas, adenomas of the adrenal, thyroid, and pituitary. In addition, multiple ulcers of the duodenum were noted, one of which had eroded into the head of the pancreas.

X-ray Interpretation:

Fig. 1 demonstrates multiple ulcers of duodenum and proximal jejunum. There is



Fig. 1

dilatation of the duodenum and jejunum with thickened transverse mucosal folds.

Comment: The diagnosis of this case was made 10 years after death on the basis of the association of multiple jejunal ulcers with carcinoma of the pancreas, diarrhea, and multiple adenomatosis. At the time of death the Zollinger-Ellison syndrome had not been described.

Case No. 2—C.J.

C.J. presented with a history of burning epigastric pain relieved by food in 1953 at which time two duodenal ulcers were demonstrated. Because of recurrence of symptoms and bleeding, subtotal gastric resection was done two years later. Vagotomy was performed a year later because of numerous subsequent admissions for epigastric pain and recurrence of marginal ulcer.

In spite of good medical management and adequate surgery this patient had persistent symptoms necessitating multiple hospitalizations with excessive gastric volume and acidity. Because of a positive Hollander test transthoracic vagotomy was done in 1958. One month postoperatively, the patient had recurrence of symptoms with massive hematemesis and melena and demonstrated both gastric and marginal ulcers for which he was treated with gastric irradiation on two occasions. After frequent hospitalizations, continuous symptoms, and sporadic bleeding, the patient was readmitted in 1961 for total gastrectomy for suspected Zollinger-Ellison syndrome. At surgery no pancreatic tumor could be identified.

Following total gastrectomy the patient was dramatically improved, had no symptoms, and gained weight. He was followed in the clinic for seven years with no complaints. He died in 1968 from unrelated causes. An autopsy revealed non-beta islet cell carcinoma.

X-ray Interpretation:

Fig. 2 shows a marginal ulcer present after subtotal gastrectomy, vagotomy, and transthoracic vagotomy. In addition, there is dilatation of proximal jejunum with markedly edematous and thickened transverse mucosal folds.

Comment: This patient illustrates the lack of success of usual medical and surgical treatment in this disease. The addition of irradiation did not benefit the patient. After total gastrectomy he remained asymptomatic.

Case No. 3—R.S.

This 44 year old male was admitted to the Veterans Administration Hospital in

1957 for melena when a duodenal ulcer was demonstrated by x-ray. The symptoms responded initially to medical treatment. Because of several recurrent episodes of epigastric pain and upper G.I. bleeding, he had subtotal gastric resection with Bilroth II



Fig. 2

anastomosis. Symptoms, however, recurred and he underwent exploratory laparotomy in 1961, at which time a pancreatic tumor with metastasis to the liver was found. A histological diagnosis of non-beta islet cell pancreatic tumor was made. At that time vagotomy was performed.

Subsequently, the patient is being followed in the clinic and remains asymptomatic. Periodic follow-up liver scans have demonstrated multiple cold areas in the liver suggestive of metastatic disease but there has been no evidence of progression in serial examinations. A serum gastrin immunoassay performed in 1969 was 2500 picograms per ml. (normal 400-500 picograms).

X-ray Interpretation:

Fig. 3—Selected films from a 1957 study show an ulcer of the descending limb of the duodenum and a chronically deformed duodenal bulb.



Fig. 3

Fig. 4—1959 study shows multiple marginal ulcers and edematous dilated proximal jejunum. The large volume of intraluminal



Fig. 4

fluid has caused granularity and dilution of the barium column.

Comment: This patient illustrates the relative benignity of this tumor. Although he has had pancreatic carcinoma with metastases for over 13 years, he has been able to live a normal life without any symptoms. It is interesting that in this patient subtotal gastrectomy with vagotomy was adequate to control his symptoms which is unusual. The metastases have been followed with serial liver scans with no evidence of increase in size.

Case No. 4—J.F.

Four months prior to admission this 46 year old Negro male noted the onset of severe watery, occasionally malodorous diarrhea associated with 25 lb. weight loss. The past history was not remarkable. He had at no time abdominal pain suggestive of peptic ulcer disease. The physical examination was normal. General laboratory data were normal with the exception of persistently elevated serum amylase. The upper G.I. series revealed a markedly abnormal duodenal and small bowel pattern which was highly suggestive of Zollinger-Ellison syndrome. Celiac angiography showed a "tumor blush" in the area of the tail of the pancreas and another in the liver. A liver scan was negative. Small bowel biopsy, qualitative and 72-hour quantitative stool fat determination were all normal. An endocrine evaluation was normal. Multiple gastric analyses were strongly suggestive of Zollinger-Ellison syndrome (Table I), with 12-hour secretion in the 2000-4000 ml. range, 100-120 mEq/L free acid, and pH of 0.9-1.1. The pH measured at the ligament of Treitz was 1.4. With histamine stimulation there was no increase in gastric acidity. Gastroscopy revealed markedly increased gastric mucosal folds, a large amount of gastric secretion, but no ulcer.

Based on these data, a diagnosis of Zollinger-Ellison syndrome was made and the patient underwent total gastric resection with isoperistaltic jejunal interposition. No tumor was found at surgery. Diarrhea abated after surgery and three year postoperative follow-up has been uneventful, the patient remaining totally asymptomatic.

X-ray Interpretation:

Figs. 5 and 6 present selected films from an upper G.I. series using USP Barium without suspending agent. Note the thick gastric mucosal folds in the fundus and along the lesser curvature. The duodenum and jejunum are dilated with very thick transverse mucosal folds. The large amount of fluid in the small bowel has caused flocculation and segmentation of the contrast medium. This pattern was altered to a continuous granular diluted column by the use of Barium Sulfate with a suspending agent.



Fig. 5

TABLE I

RESULTS OF GASTRIC ANALYSIS IN THREE SUBJECTS WITH ZOLLINGER-ELLISON SYNDROME

Patient	12 Hour Overnight Secretion (ml)	Basal Acid conc. (mEq/1)	1 Hour BAO (mEq/ Hr.)	BAO / MAO	BAC / MAC
J.F. Case #4	2000-4000	105	32	1.5	1.1
W.P. Case #5	2100-2800	158	38	0.36	1.0
I.S. Case #8	1600-2000	84	42	0.62	0.75

(Fig. 7) No ulcers were seen on several upper gastrointestinal examinations.



Fig. 6



Fig. 7

Fig. 8 represents the upper G.I. series after total gastrectomy with reversion of the small bowel pattern to normal.

Comment: This patient in spite of enormous gastric acid hypersecretion never had symptoms of peptic ulcer and presented to the hospital with a history of diarrhea only. The diagnosis was suspected on the basis of

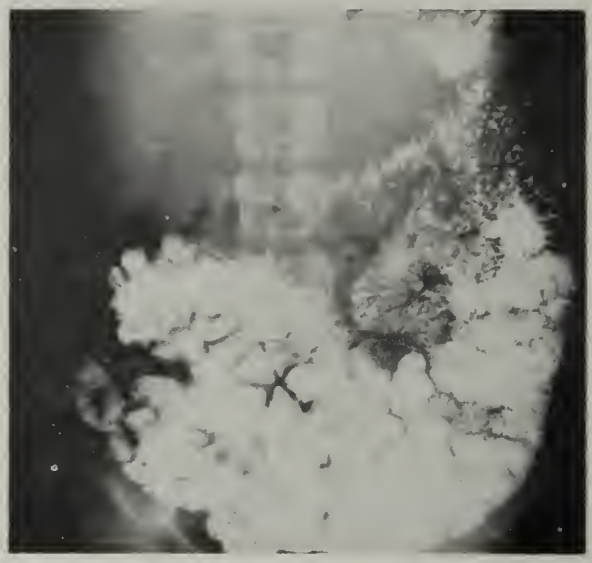


Fig. 8

markedly abnormal radiological appearance of duodenum and small bowel and proven after numerous abnormal gastric analyses. The gastrin assay two years after surgery was slightly elevated.

Case No. 5—W.P.

This 46 year old white male was admitted to the hospital for hematemesis, gastrointestinal bleeding, and shock. History revealed a similar episode of upper G.I. bleeding two years previously. Since the first episode of bleeding he had daily epigastric burning pain for which he took very large quantities of aspirin. There was no history of diarrhea. Physical examination revealed a pale, lethargic, thin male. There was moderate epigastric tenderness on palpation. Nasogastric intubation revealed no blood in the stomach. An upper G.I. series demonstrated one large and several small jejunal ulcers. Gastric secretory studies were all suggestive of Zollinger-Ellison syndrome (Table I). Liver scan and endocrinologic evaluation were normal. Gastrin assay done by radio immu-

noassay was slightly abnormal (1200 picograms).

The diagnosis of Zollinger-Ellison syndrome was made on the basis of jejunal ulcers, gastric hypersecretion, and clinical course. A total gastrectomy was done and no pancreatic tumor or metastasis were found. Since surgery the patient had remained asymptomatic.

X-ray Interpretation:

Fig. 9 demonstrates one large and three small jejunal ulcers in the area of the ligament of Treitz.



Fig. 9

Comment: The presence of a jejunal ulcer is pathognomonic for Zollinger-Ellison syndrome. The absence of an obvious tumor at surgery does not rule out the diagnosis as gastrin hypersecretion could be secondary to diffuse islet cell hyperplasia, occult tumor or metastatic disease.

Case No. 6—A.K.

This 43 year old white male presented in February, 1968, with the chief complaint of severe epigastric pain radiating to the back and intermittent nausea and vomiting. Pain was most prominent at night and was not relieved by food or antacids. Similar episodes of pain two years prior to this responded to usual medical therapy for peptic ulcer, although no ulcer was found on the radiological examination.

Physical examination was normal and general laboratory data not remarkable. An upper G.I. series showed an irregular edematous terminal duodenum and proximal jejunum interpreted as granulomatous jejunitis.

At this time laparotomy was performed and a large inflammatory mass involving the distal duodenum and proximal jejunum was noted. A gastroenterostomy and vagotomy were performed and multiple biopsies obtained. These biopsies revealed granulation tissue histologically.

One month postoperatively the epigastric pain recurred. Upper gastrointestinal series revealed several gastric ulcers. On intensive medical therapy the patient became asymptomatic.

A year later he had recurrence of severe epigastric pain, nausea, and vomiting associated with 3-4 watery stools daily. Physical examination revealed epigastric tenderness. X-ray examination was essentially unchanged from the previous study. Gastroscopy was done and the gastrojejunal stoma was visualized and described as normal. The striking finding was marked gastric hypersecretion during the procedure. While the gastroscope was in place, over 1000 cc. of fluid was obtained with a pH of 1.0. On the basis of the gastric acid hypersecretion and clinical and radiological features a diagnosis of Zollinger-Ellison syndrome was made.

The patient underwent laparotomy and a 37 cm. section of distal duodenum and proximal jejunum were removed. Antrectomy with Bilroth II anastomosis was also done. Definite ulcerations were found in the jejunum and on the posterior wall of the stomach. In addition a 1 x 1 cm. mass in the duodenum was removed which revealed non-beta pancreatic islet cell adenoma. The patient's postoperative course was uneventful and on follow-up he has remained asymptomatic.

X-ray Interpretation:

Fig. 10 shows markedly hypertrophied gastric mucosal folds especially along the lesser curvature. The duodenum has the characteristic appearance with marked dilatation and irregular thickened tranverse



Fig. 10

mucosal folds. There are two jejunal ulcers demonstrated at the gastroenterostomy site.

Comment: As pointed out by Zboralske and Amber,[53] the diagnosis of Zollinger-Ellison syndrome is a responsibility of the radiologist. In addition to peptic ulcers, the appearance of dilated, hypotonic megaduodenum, and edematous small bowel with the marked "hypersecretion" pattern strongly points to this diagnosis. In retrospect all previous x-rays in this patient definitely show this abnormal duodenal and small bowel pattern.

Case No. 7—A.R.

This 28 year old CF presented in April, 1968, with massive upper gastrointestinal bleeding. She had a history of epigastric burning pain, nausea, and vomiting intermittently for the preceding five years. Physical examination was pertinent in that a 1 cm. freely movable thyroid nodule was noted in the left lobe. An upper GI series revealed duodenal ulcer. Because of persistence of these symptoms the patient had vagotomy, subtotal gastric resection, and Bilroth II anastomosis. Her postoperative course was complicated by the recurrence of upper gastrointestinal hemorrhage.

After discharge she remained asymptomatic for about six weeks, then had return of epigastric pain and melena. Pertinent physical findings at this time were marked pallor with evidence of weight loss, tachycardia, and the palpable thyroid nodule. A large gastric ulcer was demonstrated by upper gastrointestinal series. Gastric analysis revealed 110 mEq of free HCl with a pH of 1.0. Gastroscopy was unsatisfactory because of large amounts of gastric secretion. Multiple serum calcium determination were all in excess of 15 mg%. Celiac arteriography revealed a 4 cm. sharply demarcated tumor blush in the area of the head of the pancreas. A repeat G.I. series showed two large penetrating jejunal ulcers, one immediately adjacent to the stoma, another more distal in the efferent loop. The diagnosis of polyendocrine adenomatosis was made. Because of the persistent elevation of serum calcium and obstipation, the patient had neck exploration. Two distinct adenomas of the left parathyroid were found.

The patient subsequently underwent laparotomy at which time a 1.5 cm. adenoma in the head of the pancreas and a smaller adenoma in the uncinate process were identified. These tumors were excised and a total gastrectomy with jejunal interposition was instituted. Pathology revealed a pancreatic non-beta islet adenoma with metastasis to porta hepatis and pancreatic lymph nodes.

Her postoperative course was uneventful. Since discharge she has gained 20 lbs. of weight and remained essentially asymptomatic.

X-ray Interpretation:

Fig. 11 demonstrates a large penetrating duodenal ulcer.



Fig. 11

Fig. 12—two large jejunal ulcers are demonstrated. Both appeared after partial gastrectomy and vagotomy.



Fig. 12

Comment: A classical example of multiple endocrine adenomatosis presented with gastrin-induced gastric hypersecretion and hypercalcemia. About 20% of all patients with Zollinger-Ellison syndrome will have multiple endocrine adenomatosis. In this patient there was no family history of peptic ulcer diathesis.

Case No. 8—I.S., Jr.

A 42 year old CM presented to the hospital with an eighteen month history of watery diarrhea and an associated 20 pound weight loss. He had also noted intermittent epigastric pain relieved by food. The remainder of the history and physical examination were not remarkable.

The serum amylase was elevated with a two hour urine amylase of 1650 units. Upper gastrointestinal series showed dilatation of the duodenum and jejunum with edema of the duodenal mucosa and evidence of hypersecretion. Celiac and mesenteric arteriograms were normal. The results of gastric analysis were markedly abnormal and are presented on Table I. Gastroscopy revealed a voluminous hypersecretion with giant rugal folds. On the basis of this information a diagnosis of Zollinger-Ellison syndrome was made and the patient had vagotomy with antrectomy and Bilroth II anastomosis. A distal pancreatectomy and splenectomy were also done. No definitive tumor was seen at surgery.

Postoperative gastric analysis demonstrated 580 cc with 157 mEq. total acid. The patient has done well in two-month followup with only intermittent abdominal pain.

X-ray Interpretation:

Fig. 13: There is gastric hyper-rugosity with increased gastric fluid. "Megaduodenum" is present with dilation, thickened transverse folds, hypotonia and excess intraluminal fluid. These changes become less marked in the distal small bowel. This study was done using commercial Barium Sulfate with a suspending agent.

Fig. 14: This figure demonstrates homogenous dilution of the contrast media in the jejunum and ileum, a result of increased small bowel fluid. Barium collected in a gastric ulcer could not be conclusively demonstrated because of the markedly thickened gastric folds and increased fluid.



Fig. 13



Fig. 14

Fig. 15: A repeat study using USP Barium without suspending agent. There is marked flocculation and segmentation of the contrast material in the stomach, duodenum, and distal small bowel.

Diagnosis of Zollinger-Ellison Syndrome

I. *Clinical Features*

The Zollinger-Ellison syndrome is classically defined by the clinical triad of (1) gastric acid hypersecretion with peptic ulcer diathesis and inexorable course usually resistant to medical management, (2) atypical location of ulcers (eg) below ligament of Treitz (virtually pathognomonic if present), and (3) non-beta pancreatic islet cell tumor.[1] Massive gastric acid hypersecretion is responsible for the most prominent clinical manifestations of Zollinger-Ellison syndrome such as peptic ulcer diathesis and diarrhea. The importance of diarrhea as a presenting feature of the syndrome has been subsequently recognized and included in the symptom complex. Many variant cases have been described, necessitating the concept of a clinical spectrum and decreasing the importance of the "classic triad."[2-13] Our experience with eight cases illustrates this point in that only six patients presented with the



Fig. 15

"classical" clinical features, and two had diarrhea only.

Recent reports have found that diarrhea was present in 35% of all cases of Zollinger-Ellison syndrome.[2] From the pathophysiological and clinical point of view the diarrhea can be divided into three groups: (1) steatorrhea, (2) watery diarrhea with hypokalemia and electrolyte imbalance, (3) nonspecific diarrhea.

The group of patients with malabsorption and steatorrhea[14-24] have gastric acid hypersecretion with recurrent peptic ulcer disease and very high circulating gastrin levels.

The very large volume of highly acid gastric juice is delivered to the small bowel where it overwhelms the buffering capacity of pancreatic juice, bile and Brunner's gland secretion resulting in a marked decrease in intraluminal small bowel pH. A pH as low as 1.0 is not uncommonly found in the jejunum and decreased values have occasionally been documented in the ileum.[13,17,19,24] This unphysiologic "acid environment" in the small bowel then may cause streatorrhea by several mechanisms:

(1) Inactivation of lipase. The optimal pH of pancreatic lipase is 7.0. The decrease in small bowel pH results in lipase inactivation and impaired intraluminal hydrolysis of triglyceride.

(2) Because of low small bowel pH the bile salts precipitate out of the solution and thus are incapable of normal micelle formation, resulting in a decreased removal of fatty acids and monoglycerides from the oil-water interphase. The association of steatorrhea with decreased micelle formation has been recently described.[29]

(3) In addition to the events interfering with intraluminal hydrolysis of fat, patients with Zollinger-Ellison syndrome have marked small intestinal mucosal alterations. The most common histopathological changes observed are patchy flattening or loss of villi with marked inflammatory mucosal changes and edema. The absorptive cells of the mucosa may undergo metaplasia to mucous secreting cells which no longer participate in absorptive processes. These altered cells appear incapable of transporting re-esterified fat out of the cell, a phenomenon called "exit delay".[17]

(4) Pancreatic exocrine insufficiency secondary to tumor replacement or ductal obstruction by tumor has been suggested as a possible cause of steatorrhea. This mechanism, however, is probably of infrequent etiological significance.

Thus the steatorrhea and malabsorption found in the Zollinger-Ellison syndrome is primarily a result of decreased small bowel pH resulting in interference with intraluminal hydrolysis of triglycerides and inefficient micelle formation. In addition, absorption may be impaired because of histopathological changes of the small bowel mucosa. After total gastrectomy the mucosal changes return to normal, as does the intraluminal hydrolysis of fat. It has been shown that nasogastric aspiration will correct steatorrhea and temporarily abolish diarrhea. Also, large doses of anticholinergic drugs will similarly decrease the extent of steatorrhea.[20]

A second form of diarrheal syndrome is the profuse watery diarrhea often associated with marked electrolyte imbalance, particularly hypokalemia.[14,25-28] Usually these patients present with a profuse diarrhea, dehydration, and sometimes paralysis due to severe hypokalemia. If the diagnosis is not made early these patients may die from hypotensive shock or hypokalemia. The serum electrolyte pattern is similar to that found in patients with villous adenoma. These patients do not necessarily have gastric acid hypersecretion, some have achlorhydria, and many have no measurable increase in gastrin.[28] The etiology of this type of diarrhea is not entirely clear, but several interesting hypotheses have been proposed. The most interesting possibility is the production of a non-gastrin hormone by the pancreatic islet cell tumor which has a pri-

mary effect on small bowel motility. Zollinger, et al.[28] have found a secretin-like extract from a tumor in a patient with diarrhea and hypokalemia but no gastric hypersecretion. This finding suggest that pancreatic tumors may secrete either gastrin or a secretin like substance, or a combination of both. At this point, however, more work is necessary before such conclusions can be made.

The third group of patients are those presenting with nonspecific diarrhea which does not fit into either of the previous subgroups.[14,15] In general, this group of patients have gastric acid hypersecretion, and severe ulcer diathesis but do not have steatorrhea. Our patient, J.F., Case No. 4, is an example of this group.

The clinical association of polyendocrine adenopathy with Zollinger-Ellison syndrome has been well documented[2,4,30,31] and reported to occur in some 20% of cases according to Ellison.[2] The pancreas, parathyroids, and pituitary are the most common organs involved. The pancreas was involved either alone or in combination in 81% of 85 cases studied by Ballard.[59] For these reasons every patient with the clinical symptoms and laboratory findings suggestive of Zollinger-Ellison syndrome should have a thorough endocrine evaluation. In this series, patient A.R. presented with marked hypercalcemia in addition to peptic ulcer diathesis. Patient E.S. was found to have endocrine adenomatosis at postmortem examination.

II. *Gastric Analysis*

The most useful easily available procedure in establishing the diagnosis of the Zollinger-Ellison syndrome is the gastric analysis. The basis for gastric hypersecretion in these patients is the production and release of gastrin or active gastrin-like peptides by the pancreatic islet cell tumor.[32,45] Due to continuous stimulation by gastrin the parietal cell mass increases[34] resulting in excessive gastric secretion. Several useful approaches to the interpretation of gastric analysis have been recommended.[15,21,32-42]

(1) *Twelve-hour basal nocturnal gastric secretion:* This test is suggestive of Zollinger-Ellison syndrome when the 12-hour collection is greater than 1000 ml and free hydrogen ion concentration is greater than 100 mEq/liter. It is important to note, however, that 26% of 54 cases studied by Ellison and Wilson[2] had less than 100 mEq. of free acid and 15% had less than 1000 cc overnight secretion. It should also be emphasized that similarly increased gastric acid secretion can be encountered in gastric outlet obstruction and retained antrum following subtotal gastric resection.[39]

(2) *The one-hour basal acid output (BAO)* is the product of the hydrogen ion concentration and volume of the one-hour basal sample (expressed as mEq per hr). Aoyagi and Summerskill[33] measured the one-hour basal output and found 15 mEq/hr. or more in 68% of patients with pancreatic islet cell tumors. This amount of acid output was found in only 3% of patients with duodenal ulcer and never in normal subjects. In those patients with recurrent symptoms following gastric surgery the BAO was greater than 5 mEq/hr. in 55% of Zollinger-Ellison cases.

(3) *The ratio of basal acid output to maximal acid output (BAO/MAO)* This test is based on the consideration that parietal cells are already maximally stimulated by the high gastrin levels and consequently the addition of a histamine stimulus will not further increase acid output significantly.

Marks, et al.[41] have found that this ratio is greater than 0.6 in the Zollinger-Ellison syndrome, but less in peptic ulcer disease. Aoyagy and Summerskill,[33] however, do not believe this ratio offered any advantage to basal acid output determinations as it had similar false positives and false negative results.

(4) *The ratio of basal acid concentration to maximal acid concentration (BAC/MAC).*

In a search for a more accurate and reproducible laboratory test for Zollinger-Ellison syndrome, Ruppert, et al.[42] studied the ratio of basal to maximal acid concentration (BAC/MAC). In their series of five patients with Zollinger-Ellison syndrome this ratio was greater than 0.6, as well as in four additional cases collected from the literature. These authors suggested that this ratio offers the most accurate diagnostic test in Zollinger-Ellison patients.

All these tests depend, however, upon the proper and accurate collection of gastric secretion, meticulous positioning of the nasogastric tube in the most dependent portion of the stomach as well as maintenance of patency of the tube. Even under ideal circumstances, however, these tests may not be diagnostic.

Winship and Ellison[40] demonstrated the frequent variability of gastric secretory studies in a number of patients undergoing serial gastric analyses. This serves to emphasize that a single gastric analysis is not sufficient to eliminate the Zollinger-Ellison syndrome as a diagnostic consideration.

III. *Gastrin Assay* [32,43-52]

In the original description in 1955 Zollinger and Ellison[1] postulated that the pancreatic islet cell tumor might release a substance with potent gastric acid stimulating properties responsible for recurrent peptic ulcer disease, characteristic of the syndrome. In 1960 Gregory, et al.[45] demonstrated a potent gastric secretogogue in an extract from a pancreatic non-beta islet cell tumor. Gregory and Tracy[60] in 1964 isolated the heptadecapeptides gastrin I and II from hog antral mucosa and related them to the hormone which is released from the antral mucosa during digestion and plays an important part in gastric secretion. These authors[47] also elucidated the gastrin structure and described its physiological properties.[52] They showed that the C-terminal tetrapeptide sequence was the active part of molecule displaying all of the physiological properties. McGuigan, et al.[46] developed a radio-immunoassay technique with rabbit antibodies to human gastrin I to measure serum levels of gastrin in patients with Zollinger-Ellison syndrome. By this technique the serum gastrin level in control patients was 400-500 picograms/ml. Patients with Zollinger-Ellison syndrome were found to have levels approximately ten times this value.

The radio-immunoassay technique at this time is available to the clinician only on a limited basis. It has not yet been utilized in a large group of patients, but the test appears to be an important addition to the diagnostic armamentarium.

Certain limitations of gastrin assay must be considered. The group of patients with watery diarrhea, electrolyte, imbalance, and hypokalemia do not have elevated gastrin levels. In addition, patients with gastric outflow obstruction or retained gastric antrum may also have increased gastrin levels; thus in these pathologic states one might expect gastrin assay to be of little differential value.

Also, gastrin levels may be influenced by other factors as reported recently by Trudeau and McGuigan.[48] In a patient with proven Zollinger-Ellison syndrome the levels of gastrin were found to vary directly with serum calcium concentration decreasing multifold with the development of hypocalcemia after parathyroidectomy. The implication of this observation in relation to gastrin assay in patients with hypocalcemia secondary to steatorrhea and those with multiple endocrine adenomatosis is immediately apparent.

IV. *Radiological Features*[53,54]

The radiological features of Zollinger-Ellison syndrome may be quite characteristic. Recently additional radiological signs were described and their importance in suggesting the diagnosis stressed by Zboralske and Amber.[53]

Ninety per cent of these patients at some time during their illness develop ulcers. It should be emphasized that 75% of the ulcers

are in the usual locations, most commonly in the duodenal bulb. They are found less frequently in the stomach. Ulcers distal to the post bulbar area are highly suggestive and jejunal ulcers are virtually pathognomonic of this diagnosis. The rapid appearance of marginal ulcers after partial gastrectomy and effective vagotomy are also characteristic.

The gastric mucosal folds may be very prominent. This probably occurs as a result of increased parietal cell mass and mucosal edema.

The markedly dilated, hypotonic duodenum (megaduodenum) with thick transverse irregular mucosal folds is also a feature of Zollinger-Ellison syndrome even without ulceration. A similar pattern continues in the proximal jejunum but tends to become less prominent caudally. The large volume of gastric secretion present throughout the small bowel causes flocculation and segmentation when a USP Barium Sulfate preparation without suspending agent is utilized. This pattern may be altered to that of a continuous contrast column having a diluted granular appearance by the addition of a suspending agent to the Barium preparation. These features are prominent in our patients and are depicted in the illustrations.

V. *Histopathology*[10,55-57]

Histologically the tumors associated with Zollinger-Ellison syndrome are composed of secretory cells, usually well differentiated with a highly vascular stroma. The nuclei tend to be round, are not bizarre in appearance, and mitoses are infrequently noted. Structurally the cell type is often difficult to ascertain solely on histologic criteria and classification often depends on the associated clinical history. The use of special stains to aid in the differentiation of cell type has been attempted but appears to be of limited value.[10,55]

Approximately 75% of these tumors are either malignant or of multicentric origin at the time of diagnosis. Schulte, et al.[10] believed that all tumors associated with the Zollinger-Ellison syndrome exhibit an infiltrative pattern of growth even in small presumably young lesions. These authors feel that all of these tumors have the potential for local invasion and destructive growth and for distant metatasis. In addition it is virtually impossible to determine if a primary tumor is malignant solely on morphological criteria.

Microadenomatosis or diffuse islet cell hyperplasia is present in approximately 20% of cases. This histopathological entity may produce the syndrome in the absence of discrete tumor or may be associated with malignant disease or solitary adenoma. The concept of nesidioblastosis or neo-islet formation has also been described.[55,56] These patients have proliferation of centroacinar and intercalated duct cells which Brown and Still[56] believe may be the result of stimulation by increased secretin levels.

In a series of 25 cases reported by Way, et al.[5] 68% of patients had islet cell tumors located and only 12% had a solitary adenoma. The 32% which had no tumor located but had the characteristic symptom complex probably had distant occult metastases, diffuse hyperplasia or nesidioblastosis which was not detected.

Treatment[2,5,61-63]

When the diagnosis of Zollinger-Ellison syndrome is established total gastrectomy is the treatment of choice. Ellison and Wilson[2] in reviewing 260 registered cases found that total gastrectomy as the initial procedure resulted in the best survival. Their data suggest that results following resection of tumor alone or ulcer surgery less than total gastrectomy are not sufficiently good to justify their consideration. Way, et al.[5] in their analysis of 25 cases of Zollinger-Ellison syndrome also found that patients treated with total gastrectomy had the best survival.

Several authors have advised excision of

local adenomas as a therapeutic approach when this is possible. The difficulty in differentiating benign from malignant tumor histologically, the incidence of diffuse hyperplasia or nesidioblastosis in association with apparently discrete adenoma and the presence of metastatic tumor not obvious at the time of surgery are all factors mitigating against this approach.

The possible role of a feed-back mechanism from the stomach which either facilitates tumor growth or exerts a permissive effect has been suggested.[5,58,59] Although this concept remains unproven, there are sufficient cases described with either tumor regression or apparent arrest in growth of metastatic disease following total gastrectomy to make this speculation tenable. Furthermore, it is well established that a patient is statistically more likely to succumb to complications of recurrent ulcers when a lesser operation is chosen than from the metastatic disease.

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The Hazards of Flying

The hazards of flying as a passenger on United States scheduled lines have been quite low and the record since 1960 suggests that it is still decreasing. During the 1960's, the number of fatal accidents in domestic flights on United States scheduled airlines has ranged from 3 to 7 per year. The fatality rate for 1968 has been estimated at .0009 per 1,000 passenger hours, the result of six passenger accidents. The experience on international flights of United States scheduled airlines has been similar to that in domestic flying.

The number of passengers carried by United States scheduled airlines was nearly 58 million in 1960, but grew to over 132 million in 1967. The revenue passenger miles registered by United States scheduled airlines in both domestic and international flights rose from more than 40 billion in 1960 to 103 billion in 1967.

The hours flown in general aviation in the United States—that is, in flying other than on public carriers—exceed those on scheduled airlines and other public carriers by a wide margin.

Of special interest is corporate and business flying in the United States. This is done either by professional pilots or by nonprofessional pilots who engage in a wide variety of activities for business purposes. Corporate and business flying accounts for about a third of the hours flown in general aviation. During 1963-66, the pilot fatality rate in such flying was .014 per 1,000 airplane hours.

Other commercial aviation, such as transportation for hire, survey and patrol flights (excluding aerial application activities, such as crop dusting) has been subject to a similar hazard—about .016 per 1,000 airplane hours during 1963-66.

Plane travel on domestic scheduled airlines is somewhat more hazardous than travel by railroad or bus. However, the scheduled airline passenger fatality rate is distinctly lower than the average in automobile travel on turnpikes, which in turn is considerably safer than automobile travel in general.

—*Statistical Bulletin, Metropolitan Life Insurance Company.*

Practical Synovial Fluid Examination

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Examination of synovial fluid is a most helpful test for making a definitive diagnosis of one of the various types of arthritis, especially gout, pseudogout and septic arthritis.

EXAMINATION OF SYNOVIAL FLUID is an extremely valuable procedure in making a rapid and accurate diagnosis in most types of joint diseases. Unfortunately, this procedure is frequently ignored except in cases of suspected septic conditions. It is important to remember that synovial fluid reflects the pathology of joint diseases in much the same manner as pleural fluid reflects processes occurring in the lungs.

Synovial fluid is mainly a dialysate of plasma plus hyaluronic acid which is a sulfate-free mucopolysaccharide produced by synovial cells. In general, the concentration of small molecules, such as glucose and uric acid, will approximate the concentration of these molecules in blood. Larger molecules, such as protein, will be diminished in concentration. The main functions of synovial fluid are joint lubrication and providing nourishment to articular cartilage.

It is not the purpose of this paper to outline the details of performing an arthrocentesis. Those interested further in this procedure can consult excellent references.[1,2,3,4] It should be remembered, however, that there is no absolute contraindication for performing a joint aspiration.

Iatrogenic infections are extremely rare but strict adherence to aseptic procedures is mandatory.

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Synovianalysis

It is best to examine the fluid when fresh, but the fluid will keep fairly well if frozen.[5] If an anticoagulant is used, it is essential that one use either E.D.T.A. (ethylenediaminetetraacetic acid) or one or two drops of Heparin. Oxalate is not recommended because it has been demonstrated that leukocytes in the synovial fluid may phagocytose oxalate crystals and an inexperienced examiner could erroneously make a diagnosis of one of the crystal deposition diseases (gout or pseudogout).[6]

Gross Appearance—The gross appearance of the fluid can be very helpful. Table I summarizes the findings in normal and diseased states. For example, normal fluid is clear and usually light amber. Gouty fluid is usually milky or yellow. Rheumatoid fluid usually is turbid and amber. Purulent fluid is usually gray. Homogenously bloody fluid usually indicates hemarthrosis. Caution should be used when observing the fluid through a disposable plastic syringe because the fluid may appear falsely turbid.

"Wet Drop" Preparation Studies—The microscopic examination of a drop of fresh or anticoagulated synovial fluid may yield

diagnostic information especially in cases of crystal deposition diseases (gout and pseudogout). This examination is performed by placing a small drop of synovial fluid on a glass slide, covering with a cover slip, and sealing the edges with clear finger nail polish.

TABLE I SYNOVIANALYSIS

Disease	Appearance	Mucin Clot	Viscosity	Leukocytes per cu.mm.	Sugar: serum-synovial difference (mg/100ml)	Crystals	Comment
Normal	Clear, amber	Good	High	<200 <25% polys	<10	None	
Gouty Arthritis	Milky or yellow	Poor	Low	15,000 + 70% polys	10±	Sodium urate	Strongly negative birefringent intra- and extra-cellular urate crystals.
Pseudogout	Turbid, amber, or yellow	Fair to Poor	Fair or Low	25,000± 90% polys±	10±	Calcium pyrophosphate	Few ta many weakly positive intra- and extra-cellular calcium pyrophosphate crystals.
Rheumataid Arthritis	Turbid, amber to light green	Poor	Low	15,000 + 70% polys	25	Occasional cholesteral	WBC inclusions frequently present. Rheumatoid factor usually present.
Septic Arthritis	Very turbid, Gray	Poor	Low	70,000± 90% + polys	70	Nane	Culture positive in only 20-30% of G.C. cases.
Tuberculous Arthritis	Turbid, amber or yellow	Poor	Low	30,000± 60%± polys	50+	None	Biopsy frequently helpful.
Osteoarthritis	Clear, amber	Good	High	1000± 10% polys	<10	None	Cartilage fibrils may be present.
Acute Traumatic Arthritis	Bloody or turbid	Good	High	<2000 <25% polys	<10	None	Occasional cartilage fibril. Many RBC's.
Systemic Lupus Erythematosus	Slightly turbid, amber	Good	High	3000± <10% polys	10±	None	Examine for L.E. cells.
Rheumatic Fever	Slightly turbid, amber	Good	Fair to Low	15,000 50% polys	10±	None	Occasional WBC inclusion

Adapted from Hollander, et al (1)

Only a small drop is used to prevent individual cells from moving across the field of view. Sealing the slide prevents artifacts formed from drying and will preserve the specimen for one or more hours.

Adapting the microscope for polarization is very important and is an inexpensive procedure. A polarizing disc should be inserted into the condenser or between the light source and condenser. A second disc is inserted into or above the eyepiece. One of the discs should then be rotated until the field becomes darkest. The microscope is now ready to examine the slide under polarized light.

Initially the fluid should be examined under ordinary light at low magnification. The examiner will get a rough idea of the number of cells present. Next, the entire slide should be screened under polarized light for birefringent material. If an area of birefringence is noted, this should be centered in the field and next examined under high dry magnification.

In cases of *gouty arthritis*, needle shaped crystals of sodium urate are found in nearly

100 per cent of the cases. Polarization is a great aid in identification of the crystals which may be intra- and extra-cellular (Fig. 1). If a polarizing microscope with a first-

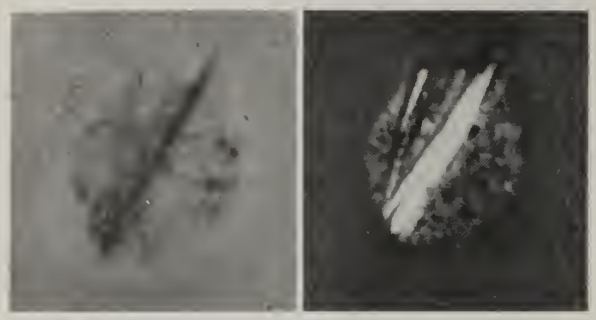


Fig. 1. Sodium urate crystals in synovial fluid leukocyte. Regular light (left) and polarized light microscopy (right).

order red plate compensator is available, the urate crystals will show a strongly negative birefringence, i.e., against the red background the crystals will appear yellow when parallel to the plane and blue when at right angles.[7] Uricase will digest the crystals.

Cases of *pseudogout* chondrocalcinosis, calcium pyrophosphate dihydrate crystal deposition disease) may present in a clinical pattern resembling gouty arthritis. Until McCarty identified the calcium pyrophosphate crystal, most cases were probably falsely diagnosed as gout.[8,9] Radiographic studies are very helpful in making the diagnosis because there is usually associated calcification, especially of the fibrocartilage and hyaline cartilage of the knees, but cartilage and tendons in other areas may be calcified (Fig. 2). There is a high incidence of associated diabetes mellitus.[10] On occasion pseudogout and parathyroid disease coexist. The etiology of pseudogout is unclear, but it possibly represents a late complication of osteoarthritis.

The "wet drop" examination of synovial fluid will reveal intra- and extra-cellular calcium pyrophosphate crystals in almost all cases of pseudogout. Some of the crystals may appear quite similar to sodium urate crystals but many will have a parallel-piped or rhomboid shape (Fig. 3). Using the compensated polarizing microscope, the crystals show a weak birefringence which is slightly positive. That is, against the red background



Fig. 2. X-ray film of knee from case of pseudogout showing calcified cartilage.

the crystals are weakly blue when parallel to the plane and are weakly yellow when at right angles. It is our opinion that with a

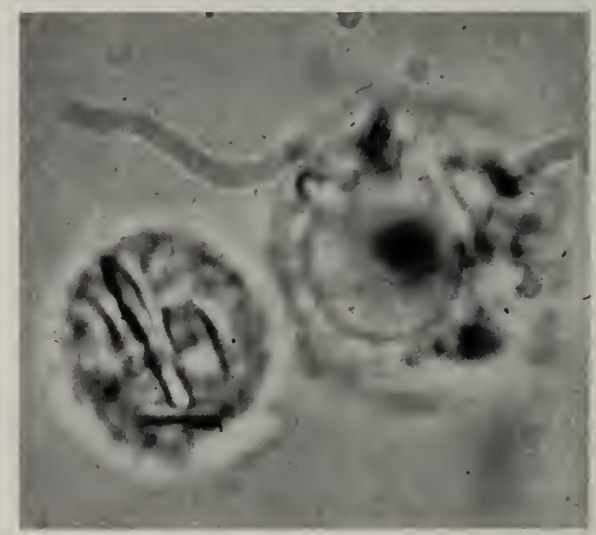


Fig. 3. Calcium pyrophosphate crystals in synovial fluid leukocyte. Regular light microscopy.

little experience, the examiner should have minimal difficulty differentiating calcium pyrophosphate from sodium urate crystals using ordinary light and simple polarizing microscopy.

Ragocytes (R. A. cells, inclusion body cells, raisin seed cells) in synovial fluid of patients with *rheumatoid arthritis* were originally described by Dr. Joseph Hollander and associates.[11] These cells are leukocytes containing inclusion bodies. They appear as dark granules under regular light microscopy at high dry magnification and as clear vacuolated areas with phase microscopy (Fig. 4). It was assumed that these bodies were phagocytosed rheumatoid factor and were noted in from five to 95 per cent of the total leukocyte population of rheumatoid synovial fluid. It was believed that phagocytosis of rheumatoid factor played a role in the pathogenesis of rheumatoid arthritis in a similar fashion to the phagocytosis of sodium urate crystals in the pathogenesis of gouty arthritis. This concept was supported with the production of acute synovitis by the injection of autologous gamma-G-globulin into inactive joints of patients with rheumatoid arthritis. Subsequent studies have shown that the findings of these leukocyte inclusions are not specific for rheumatoid arthritis. They may be found in other types of inflammatory joint disease and may be scavengers which have phagocytosed products of inflammation including gamma globulins.[12,13,14]



Fig. 4. Ragocytes in synovial fluid leukocytes. Regular light microscopy.

Osteoarthritis fluid may reveal a few to many cartilage fibrils and fragments. These may also be seen in cases of pseudogout.[1]

Cholesterol crystals are noted rarely in the fluid of cases of chronic rheumatoid arthritis (Fig. 5). These crystals are large, rhomboid, have punched-out corners, and are birefringent.

An inexperienced examiner may confuse previously injected *corticosteroid ester crystals* with urate or pyrophosphate crystals. The steroid crystals may be phagocytosed by white cells and apparently can precipitate a "post-injection flare" of the injected joint.

Reiter's Syndrome synovial fluid has been reported to show large mononuclear cells containing many vacuoles.[15] Some of these cells appear to contain polymorphonuclear cells. The specificity of this is unclear.

Viscosity—Viscosity is related to the amount and physical state of hyaluronic acid. If there is an elevation of white blood cells in the synovial fluid, there usually is a decrease in the viscosity. An exception to this rule is systemic lupus erythematosus which may show a high viscosity. A simple test for this is to place a drop of fluid on the thumb, touch the drop with the index finger and observe the length that strings when the fingers are separated. It should string three or more centimeters.

Spontaneous Clot and Mucin Clot—Normal synovial fluid does not clot spontaneously because of an absence of fibrinogen and other clotting factors.[16] Most inflam-

matory states will produce spontaneous clotting.

The mucin clot test essentially determines the state of the hyaluronate-protein complex. The test is performed by adding a few



Fig. 5. Cholesterol crystals in synovial fluid. Regular light microscopy.

drops of synovial fluid to a few milliliters of 2-5 per cent acetic acid. A good mucin clot is seen in normal and most non-inflammatory states. A mucin clot that is poor, fragments easily, or forms a flocculent precipitate is seen in most inflammatory states (Fig. 6). An exception may be SLE and rheumatic fever. Since both viscosity and the mucin clot are dependent on the character of hyaluronic acid, a good viscosity is generally associated with a good mucin clot.

Cell Counting—The white blood cell count is of particular importance in suspected septic conditions. Methods have been outlined in detail in the excellent book by Ropes and Bauer.[17] The fluid should be collected in an anticoagulant tube. The diluent should be physiologic saline because acetic acid will cause precipitation of mucin and make an accurate count practically impossible. The addition of methylene blue to the diluent will help differentiate the cell types. If the fluid is hemorrhagic, a hypotonic diluent of 0.3 per cent sodium chloride can be tried which theoretically will disrupt the red blood cells but not the nucleated cells.

A differential white count using Wright's stain is performed in the same manner as a peripheral blood smear. If the total white blood count in the synovial fluid is less than

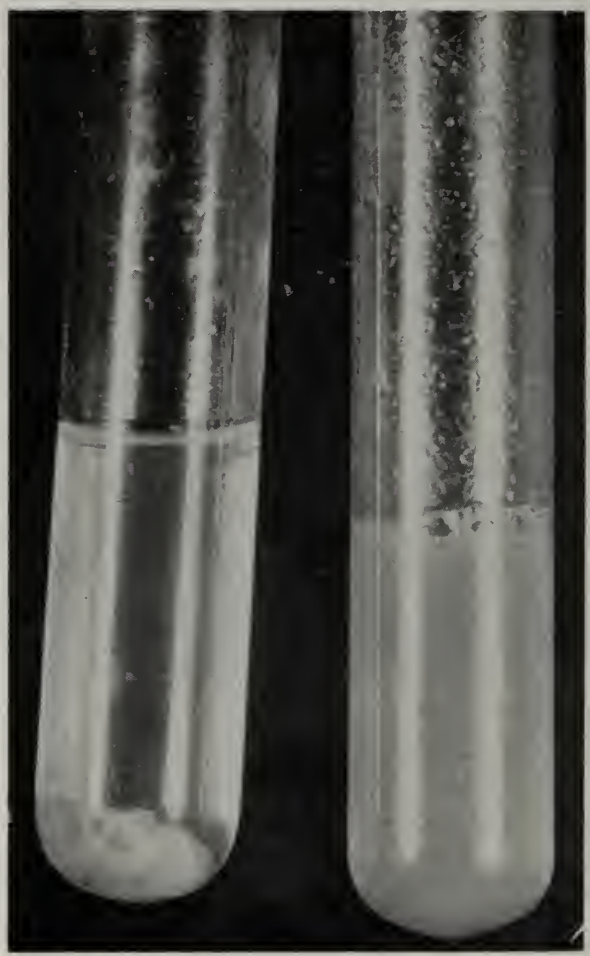


Fig. 6. Mucin clot of synovial fluid. Good (left) and very poor (right).

5,000/mm^3, it is best to centrifuge the fluid at 2,000-3,000 rpm for 10 minutes. The supernatant is then removed and physiologic saline added to the sediment until the original volume is obtained. The solution should then be re-centrifuged which will remove most of the mucin. The sediment can then be easily smeared on a slide, air dried, and stained. In cases of SLE, the L.E. cell is frequently seen.

Glucose—The glucose value of normal synovial fluid usually parallels that of serum.

The results are of greater value if the patient has been fasting for about six hours. It is even possible for normal synovial fluid sugar to be higher than that of the serum for several hours postprandially.

In any suspected septic joint condition, a glucose determination should always be performed. We have found the glucose levels to be low in almost all cases of septic arthritis observed at the Medical College of Virginia during the past five years. It is important to have the glucose level determined immediately after aspiration. Because of the glucolytic action of white cells, falsely low levels may be observed in cases of rheumatoid arthritis and gout, for example, if the white cell count of the fluid is high and the fluid is not tested for one or more hours. A synovial glucose of 50 mg/100 ml less than fasting serum should be considered as strongly indicating an infectious process until proved otherwise.

Protein—The joint fluid protein in normal fluid is around 1.5 gms/100 ml. An elevated protein level usually parallels the degree of inflammation. We have not found the protein level too helpful in most cases.

Rheumatoid Factor—On occasion, determination of rheumatoid factor in synovial fluid may be a helpful diagnostic procedure. The levels in synovial fluid may be higher than those in the serum.[18]

Bacteriology—A Gram stain showing intra- or extra-cellular organisms is diagnostic of a septic condition. This could be followed with appropriate cultures. It is important, especially with the Gonococcus, that the culture plate be inoculated immediately after aspiration of the fluid.

If acid-fast infections are suspected, the fluid should be stained and cultured for these organisms. At the same time, a closed biopsy can be performed using a needle such as the Parker-Pearson needle and may be diagnostic.

Miscellaneous Studies

Determination of synovial fluid *complement* (C^1) may be helpful in select cases. This test is usually available only at research centers. The complement level is low in both the synovial fluid and serum in cases of SLE especially if renal disease is present. This is contrasted with rheumatoid arthritis where the level is low in synovial fluid but normal in serum. Rieter's syndrome is usually associated with elevated synovial fluid levels.[15]

Antinuclear factors are frequently noted in synovial fluid of cases of rheumatoid arthritis, SLE, and other so-called collagen-vascular diseases. It may be helpful on occasion but is usually available only at research centers.

Summary and Conclusions

Examination of synovial fluid is a most helpful test for making a definitive diagnosis of one of the various types of arthritis, especially gout, pseudogout and septic arthritis. Unfortunately, it is one of the most frequently ignored tests. A practical approach to examination of synovial fluid has been described along with some newer concepts of joint inflammation. It should be remembered that only a few drops of fluid are needed for a "wet drop" examination for crystals, ragocytes, Gram stain, and a Wright's stain.

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Appendicitis in Recent Years

More than 1,500 people died from appendicitis in the United States during 1967. Although the mortality rate from this cause —0.8 per 100,000 population—is relatively low, appendicitis still presents medical problems in a sizable proportion of cases. According to the American Society of Abdominal Surgeons, about one in five patients develops gangrene and perforation.

Data gathered in the National Health Survey for the period July 1963-June 1964 reported some 355,000 operations for appendicitis. The patients having appendectomies constituted nearly 90 percent of the 404,000 patients hospitalized for appendicitis in short-stay hospitals. The average length of hospital stay was 6.5 days—7.2 for males and 5.8 days for females.

Over the entire age range (17-64) the incidence of surgery for appendicitis was higher for females than for males: 1.9 per 1,000 females, as against 1.5 per 1,000 males. For both sexes the incidence of surgery for appendicitis was highest among those at ages 17-24 and decreased with age. The average duration of hospitalization was 7.7 days for males and 8.6 for females. Males at ages 45-64 recorded the longest average hospital stay. Among females those at ages 17-24 and 45-64 were hospitalized longest on the average. The average duration of illness—combining the time of both hospitalization and convalescence—was 34.0 days for males and 37.9 for females. This loss of time was highest at ages 45-64.

In the general population of the United States mortality from appendicitis has been at a low level during the past decade. Death rates from appendicitis are distinctly higher at the older ages than at the young, reflecting the greater frequency among older people of complications resulting from chronic cardiovascular, respiratory, or digestive system disorders.

The low level of death rates from appendicitis in recent years has been due in large measure to earlier recognition, improvements in surgical techniques and anesthesia, the use of antibiotics, and postoperative intensive care units.

—*Statistical Bulletin, Metropolitan Life Insurance Company*

Management of Subarachnoid Hemorrhage

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The development of a stereotactic method of aneurysm thrombosis provides another procedure for the management of subarachnoid hemorrhage. It increases the importance of a precise diagnosis as to site and cause of bleeding.

SUBARACHNOID HEMORRHAGE may result from a variety of conditions such as trauma, ruptured intracranial aneurysm, arteriovenous malformation, neoplasm or systemic hypertension. Excluding trauma, the most common cause in people under sixty years of age is rupture of an intracranial aneurysm. The exact etiology in an individual case, however, must be determined by cerebral arteriography.

The source of a subarachnoid hemorrhage has usually stopped bleeding by the time the patient is seen by a physician. Therefore, unless a large intracranial hematoma or tumor is producing brain compression, the greatest risk to the patient is recurrent hemorrhage. For patients with ruptured intracranial aneurysm the peak incidence of recurrent hemorrhage is between one and two weeks, although aneurysms may rebleed in the first few days. Repeat hemorrhages from arteriovenous malformations are more delayed whereas recurrent bleeding secondary to hypertension is unpredictable.

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Presented at the annual meeting of The Medical Society of Virginia, Roanoke, October 1968.

In years past, patients with subarachnoid hemorrhage were often treated by bed rest without concern for the exact etiology of the bleeding because of the high risk of corrective surgery. With the development of a stereotactic method of aneurysm thrombosis, however, it becomes mandatory that a specific diagnosis be made in all cases so that appropriate therapy can be instituted immediately.

The stereotactic procedure is performed by placing a pencil shaped magnetic probe under x-ray control in contact with the aneurysm. Powdered iron is then injected directly into the aneurysm and held in place by the magnet while thrombosis occurs. The end result is a dense fibrous scar which completely obliterates the aneurysm (Fig. 1). The advantages of the stereotactic procedure are that it can be performed under local anesthesia through a small burr hole, and that extensive craniotomy with the associated brain retraction and blood vessel manipulation is not required. Therefore, stereotactic thrombosis can be performed shortly after hospitalization without aggravating cerebral edema or intracranial vasospasm.

Diagnosis

The diagnosis of subarachnoid hemorrhage is one of the easiest in medicine. Any patient who has one of the classic signs—sudden headache or sudden stiff neck—with or without neurologic deficit should be evaluated, and any patient with both is essentially diagnosed. Characteristically, the symptoms are explosive in onset and, therefore, relatively easily differentiated from other causes of headache and nuchal rigidity. The usual patient is afebrile, but a low fever can occur.

The mild to moderate sudden headache is just as important as the severe one. Many patients who enter the hospital moribund from a massive brain hemorrhage have a history of an unexplained headache of sudden onset during the weeks prior to admission which was not severe enough to result in hospitalization. Since the best hope for the intracranial aneurysm patient is prevention of the major hemorrhage every attempt should be made to evaluate the "warning bleed".

The physician must also consider spontaneous subarachnoid hemorrhage in patients with poorly explained head trauma because the injury may be the result of a hemorrhage rather than the hemorrhage secondary to the injury. A common example is the patient who falls in the bathroom and afterward complains of headache. Aneurysm rupture is frequently associated with straining at stool and the patient when found may not remember the exact chronology of the incident. Headache and intracranial bleeding out of proportion to the degree of external injury should always be carefully evaluated.

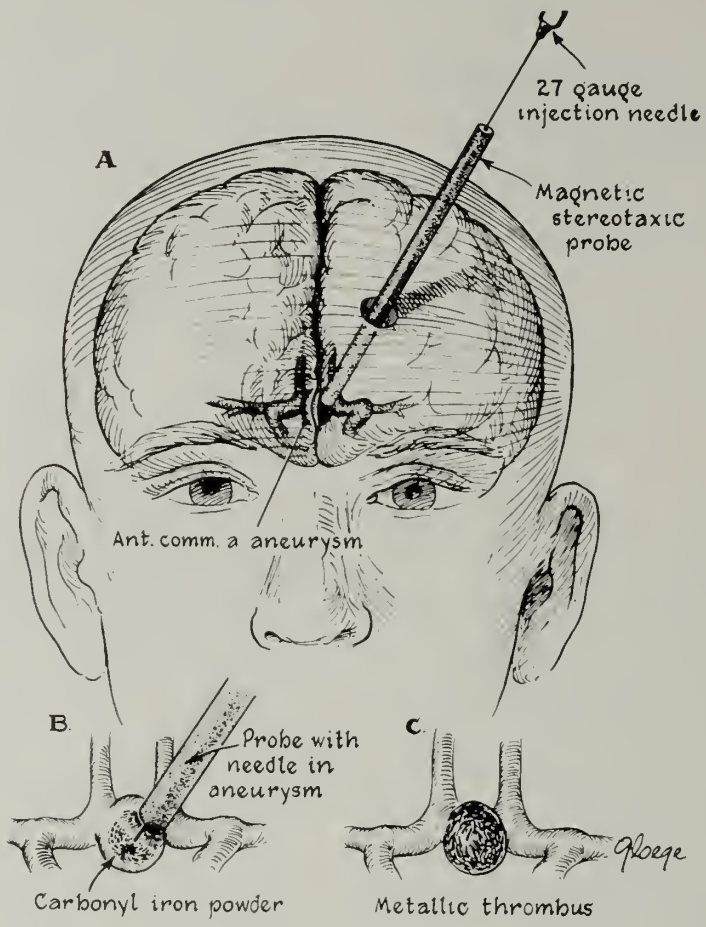


Fig. 1

Less common isolated signs of subarachnoid hemorrhage are unexplained stiff neck or bizarre behavior. Bleeding into the subarachnoid space can produce nuchal rigidity without headache particularly when the bleeding site is near the foramen magnum or in the spinal canal. Bizarre behavior can result from a hemorrhage into the frontal lobe or hypothalamus. If blood does not gain access to the subarachnoid space the classic symptoms of headache and stiff neck will not occur.

Bloody spinal fluid at lumbar puncture

definitely establishes the diagnosis of subarachnoid hemorrhage. Spinal tap is not necessary, however, if the diagnosis is clinically obvious and spinal tap is actually contraindicated in patients who may be deteriorating from an intracranial hematoma. If the clinician is suspicious that bloody spinal fluid is secondary to a traumatic lumbar puncture, he should leave the questionable needle in place and repeat the puncture two segments higher. Should the diagnosis remain in doubt help may be obtained by centrifuging the spinal fluid. Hemorrhage which has been present more than four hours will result in xanthochromia in the spinal fluid whereas the fresh bleeding of a traumatic tap will leave the supernant clear.

Emergency Care

The emergency care for the patient with subarachnoid hemorrhage depends upon the severity of the initial bleeding and the resulting neurologic impairment. The patient in coma demands immediate attention to his airway because of the well known deleterious effects of cerebral anoxia.

Many patients after intracranial bleeding develop reflex systemic hypertension. Because the elevated blood pressure may precipitate a recurrent hemorrhage all patients should have their blood pressure carefully monitored and lowered pharmacologically if indicated. A systolic blood pressure below 150 mgs Hg is desirable. However, the physician should be aware of the patient's preillness blood pressure and not produce marked hypotension below that level. Apresoline 5-20 mgs. IM or IV is a rapidly effective hypotensive agent. After Apresoline administration the blood pressure can be controlled by elevation of the head of the bed to increase the hypotensive effect or lowering the head of the bed to minimize it.

It is desirable to keep the patient with subarachnoid hemorrhage quiet, comfortable and non-apprehensive. Phenobarbital intramuscularly is usually adequate in dosage 60-120 mgm q4hr and has the added advantage of anticonvulsant properties. Additional agents including analgesics should be used as necessary, remembering, however, that agitation may be a sign of intracerebral hematoma which, of course, should be treated by evacuation rather than medication.

To facilitate patient evaluation and to aid analysis of results the patients clinical condition should be recorded according to the following grading system:

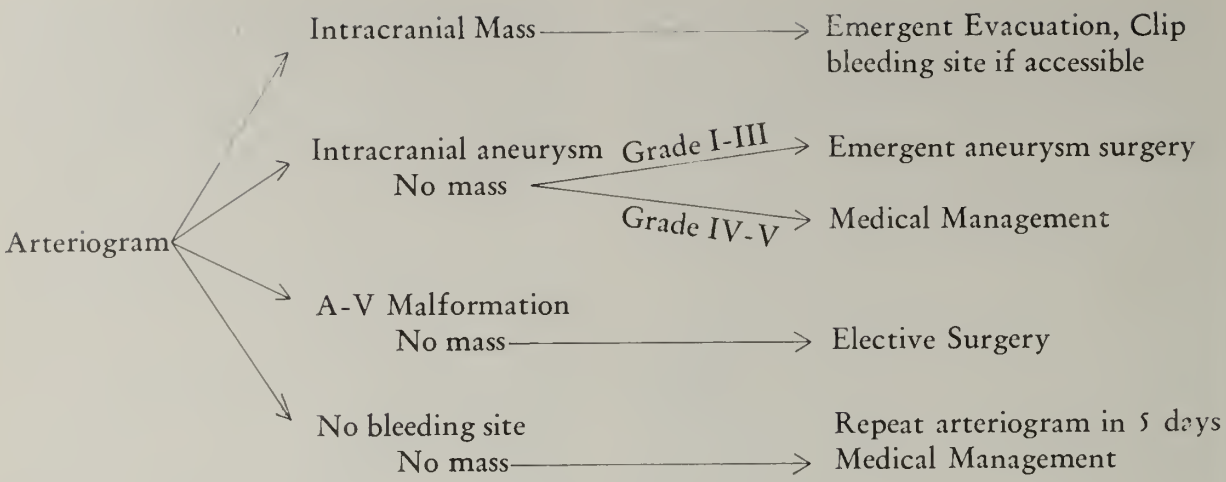
Grade I—alert, no neurologic deficit
Grade II—drowsy, minimal neurological deficit
Grade III—obtunded or moderate neurologic deficit
Grade IV—semicoma or major neurologic deficit
Grade V—moribund

Arteriography

Arteriography should be performed as soon as possible in all patients with subarachnoid hemorrhage not explained by major head trauma. The patients who are in Grades I-III are candidates for emergent surgery to prevent repeat hemorrhage if the bleeding site can be found. The patients who are in Grades IV-V are likely to die from their initial episodes unless a removable intracranial mass is identified and removed.

In order to minimize the arteriographic risk and study all the intracranial vessels from one needle puncture, cerebral arteriography can be performed by retrograde femerol catherization. This, of course, requires fluoroscopic equipment and a competent angiographer. The concept that people can be "too sick" for arteriography is a holdover from the days of poor equipment and unskilled angiographers and is no longer applicable or tolerable. At the time the arteriograms are performed, the surgeon responsible for definitive care should be on hand to make therapeutic decisions.

The course of events after the arteriogram is dictated by the x-ray findings as follows:



The type of aneurysm surgery indicated is dependent upon the individual characteristics of the patient. Some cases are best treated by carotid ligation, some by intracranial clipping of the aneurysm, some by coating the aneurysm with muscle or plastics and some by stereotactic thrombosis. Whichever therapy is deemed most effective should be performed immediately in order to remove the risk of recurrent hemorrhage. The concept of delaying surgery for a period of time frequently results in a patient deteriorating further from vasospasm or dying from recurrent hemorrhage. The important contribution of the stereotactic procedure is that it allows early surgery in almost all cases.

For those situations where medical therapy is indicated, it should include bed rest, sedation, private room, stool softeners and blood pressure control. The patient should not be taken to conferences, x-ray or other potentially exciting circumstances unless absolutely necessary. When a bleeding point has not been found repeat arteriography is essential before one can conclude that an aneurysm does not exist. The lesion may have failed to visualize on the first study because of vasospasm in the feeding vessel or temporary clot in the aneurysm. If a second negative arteriogram is obtained the patient should be treated medically for six weeks, reexamined radiologically and then if a bleeding point is still not detected, discharged without restrictions.

Summary

The source of a subarachnoid hemorrhage must be established before appropriate therapy can be instituted. This requires early suspicion on the part of the clinician to establish the diagnosis and early angiography by a competent angiographer to identify the bleeding point. Once the cause of the hemorrhage is known corrective surgery should be undertaken immediately, the type depending on what is best for the patient. The more methods of treatment available the more likely one will be applicable to the problem on hand.

The major contribution of stereotactic aneurysm thrombosis utilizing the magnetic probe is to allow early aneurysm obliteration to many patients who would have to wait before being a candidate for open craniotomy.

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Partial Common Duct Obstruction Presenting as Fever of Unknown Origin

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Cholangitis is most commonly seen in patients over 50 years of age. There is a high variable clinical picture, and hepatic function and other laboratory studies are often normal during the afebrile period.

IN 1877 CHARCOT described a clinical entity caused by obstruction of the common bile duct which resulted in (1) chills and fever, (2) right upper abdominal pain, and (3) jaundice.[1] Osler confirmed these observations in 1891; and, since, it has been referred to as Charcot's triad.[2]

With the lapse of time, it has become evident that the clinical picture caused by biliary obstruction is not so consistent and that only one or two of the triad need be present to suggest infection of the biliary tract.[4,6] While bacterial infections may produce cholangitis by transmission of the infective agent via the portal vein (enterogenous) or the hepatic artery (hematogenous), this is unusual and, according to Popper and Schaffner, the incidence of pure bacterial cholangitis has not been clearly established.[5]

Obstruction of the common bile duct, most often only partial, is the most common cause of cholangitis and may present as an acute, chronic or episodic illness.[2,3] This report is concerned chiefly with the episodic variety.

In a patient with abdominal pain and jaundice, obstruction of the biliary radicles is promptly suspected: however, when chills and fever occur in their absence, the possibility of cholangitis as its cause is often overlooked. Because of this, and prompted by recent cases in which the diagnosis was uncertain, we reviewed the hospital records at the Medical College of Virginia and McGuire V.A. Hospital of all cases discharged with a diagnosis of cholangitis over a 10-year period.

A total of 17 cases of cholangitis was found and is tabulated in Table 1.

Chills and fever were the most constant features, being present in 100% of the patients. Significant pain was present in only seven of the cases (38%), and jaundice was present in eight of the 17 (47%). As for Charcot's triad, the combination of chills and fever, pain, and jaundice existed in only four patients or 25% of this series. Note especially that six patients had only chills and fever with no pain or jaundice. Fourteen of our patients were over 50 years old.

Of interest is the fact that, in most cases, there were recurring episodes of fever, but usually the fever lasted less than 24 hours.

The physical examination was not revealing in most cases except for the presence of icterus in some, and abnormal abdominal findings were unusual.

The most useful single laboratory test was the alkaline phosphatase. It was elevated in

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16 cases. Thirteen of our 17 cases had intravenous cholangiograms performed. Only one was normal. The others had either nonvisualization, filling defects, a dilated common bile duct, or delayed emptying of dye into the duodenum.

Etiologic factors for the obstruction were quite varied. Gallstones were found in the common bile duct in 11 patients.[13] Common duct stricture was found in three cases. Pancreatitis was noted three times and carcinoma of the pancreas was responsible for the obstruction twice. Four cases had a duodenal diverticulum, and the common bile duct emptied into the diverticulum in one case.[10,11,12] It is worthy of special note that eight patients had had previous cholecystectomy.

In a review of the literature, we found a total of 49 cases of cholangitis and, ours added, makes a total of 66.[7,8,9] Forty-three of these (66%) had pain with their illness. Fever was present in 62 instances (94%). Thirty-five patients had jaundice (53%). In the 60 cases that the white blood cell count was reported, it was greater than 10,000/mm^3 in 33 instances (55%). Alkaline phosphatase was elevated in 36 of the 49 cases where it was reported.

Charcot's triad was present in only 39 of the 65 cases, and this was weighted by the fact that both Osler and Ostermiller selected only cases with all three parts of the triad present for study. Cholecystectomy had been performed in 19 of the 65 cases, or 29%.

TABLE 1

Pt.	AGE and SEX	CHILLS and FEVER	PAIN	JAUNDICE	ALK P'TASE (BLU)	IV CHOLANGIOGRAM	ETIOLOGY
J.C.	62 M	Yes	No	No			Stricture
W.G.	63 M	Yes	No	No	5.5	Diloted duct with filling defect	Stone and duodenol tic
D.T.	52 M	Yes	No	No	3.3	Deloyed emptying	Stricture
M.D.	49 F	Yes	No	No	5.6	Nonvizuolizotion	? Stone
F.B.	44 F	Yes	No	No	3.4	Diloted biliory tree	? Stone
A.C.	67 F	Yes	No	No	3.9	Diloted biliory tree	Stone
A.B.	76 M	Yes	No	Yes	7.8	Diloted biliory tree c deloyed emptying	Stone
I.T.	62 M	Yes	No	Yes	17.2	Not done	Co pancreas
N.W.	65 M	Yes	No	Yes	8.5	Not done	Co pancreas
A.B.	74 M	Yes	No	Yes	23.0	Operative - Diloted duct	Stone
W.L.	62 M	Yes	Yes	No	31.0	Nonvizuolizotion	Recurrent stones
W.C.	35 M	Yes	Yes	No	3.9	Normal	Poncreotitis
L.D.	76 F	Yes	Yes	No	4.9	Nonvizuoliotion	Stones
M.A.	64 F	Yes	Yes	Yes	6.9	Not done	Stones and pancreatitis
R.S.	61 M	Yes	Yes	Yes	4.7	Not done	Stones
I.F.	64 M	Yes	Yes	Yes	0.5	Diloted biliory tree	Poncreotitis and duodenol tic
M.B.	55 F	Yes	Yes	Yes	5.4		Recurrent stones and stricture

Case Reports

Case I: November 1948. A 62-year-old white male diabetic was admitted to the Medical College of Virginia Hospital with five episodes of chills and fever within six months. No pain except a slight "sticking" sensation in the abdomen a few days prior to admission. Past medical history included a duodenal ulcer which had not recurred after gastroenterectomy in 1923. He had a cholecystectomy in 1946. Physical exam-

ination was normal. A dilated common duct with two strictures in the distal end was found at surgery. These were dilated and a T-tube drain was inserted. There were no recurrences, and he died an accidental death seven years later.

Case II: A 63-year-old white male had substernal pain in April 1967 and was thought to have had a myocardial infarction. In December 1967, he had chills, fever and vomiting on 12 occasions in six weeks. Evaluation during this time revealed no other abnormal findings. He was seen in January 1968, and all studies were normal except for duodenal diverticula. On the eighth hospital day, he had a chill and his temperature rose to 101°. The alkaline phosphatase rose to 5.5 BLU (Normal 2.9 BLU); and the SGOT to 218 units. An intravenous cholangiogram done at this time revealed a dilated common duct with a filling defect in the distal portion. At surgery, the duct was noted to empty into the duodenal diverticula, and the duct was occluded by a 1 cm stone. The patient has done well since.

Case III: A 76-year-old Negro male was in a mental hospital and received Thorazine for years. He developed jaundice in 1967, which cleared and drug was continued. Months later, he had chills and temperature of 103°F, and later he became icteric. He was admitted to the V.A. Hospital. There was no fever. The liver was enlarged and non-tender. SB 10.4. AP 7.8 BL. I.V. cholangiogram, normal; and gallbladder contained no stones. Icterus cleared, and he was discharged. Four months later, jaundice, chills and fever recurred without any pain. Liver was still enlarged. I.V. cholangiogram showed dilated common duct and delay in emptying of dye. Surgery: common duct 2 cm. stone at ampulla. Now asymptomatic.

Case IV: A 74-year-old white male had chills and fever with nausea and vomiting in January 1969, at intervals of about three to six weeks. These recurred, and jaundice was observed in May and continued until his admission on October 1. The liver was enlarged, especially the left lobe, but was nontender. Another chill occurred on October 2 and the following day. White blood count was 17,600, with 88% neutrophils; serum bilirubin 3.5; alkaline phosphatase, 32 (Int. Units); SGOT 140. There was nonvisualization of the gallbladder. Percutaneous cholangiogram was attempted but was unsuccessful. Laparotomy revealed a markedly distended common bile duct and an operative cholangiogram confirmed this with an obstruction at the distal 1/3 of the duct (Figure 1). A 2 cm stone was impacted in this area, and the gallbladder contained many



Fig. 1

stones. The stone was removed, the duct drained and dilated at the ampulla, and cholecystectomy was performed.

Discussion

Charcot and Osler's triad of chills and fever, abdominal pain, and jaundice was, for decades, accepted as the *sine qua non* of

common duct obstruction. In recent years, it has become apparent that the lack of one or even two parts of the triad does not preclude the diagnosis of common duct obstruction as demonstrated by our cases and those in the medical literature.

If a patient with episodic chills and fever is over 50 years old and especially if cholecystectomy has been previously performed, then partial common duct obstruction is more common; therefore, it must be ruled out as a cause of the episodic fever. If the patient is seen when he is asymptomatic, there may be no abnormal findings on the physical examination or in the laboratory studies, and even a liver biopsy performed then may be interpreted as normal.

Intravenous cholangiography is the most consistently useful procedure in the diagnosis of cholangitis. The finding of a stone, an obstructed and dilated common duct, non-visualization of the duct, or a delay in its emptying in a patient with recurrent fever is strong evidence for the presence of obstructive cholangitis. If this procedure is unsatisfactory, percutaneous transhepatic cholangiography should be considered. Elevated alkaline phosphatase is the most constant laboratory abnormality, but is not always present.

Cholangitis usually develops from incomplete obstruction of the common bile duct. The most common cause is choledocholithiasis, but stricture, pancreatitis, carcinoma of the pancreas or of the ampulla of Vater may result in cholangitis also.

Each of the two cases of cancer of the pancreas was admitted with chills and high fever. One had been explored previously, and a cystoenterostomy was performed. When readmitted, he was ill with high fever and died within 24 hours. E. coli were found on blood cultures.

In cases in which bacteriological studies of the biliary tract were performed, E. coli was most frequently found. However, mixed infections as well as several with aerobacteria and gram-positive cocci were reported. In our cases of carcinoma of the pancreas, there was terminal E. coli septicemia in both instances.

When cholangitis is diagnosed, it is imperative that prompt laparotomy be performed and the biliary tract be decompressed as the ascending infection causes extensive and serious liver damage, which may result in biliary cirrhosis, septicemia and finally in death.

Summary

1) Four patients with varying degrees of intermittent common duct obstruction presenting with chills and fever in the absence of significant pain are reported. Records of 14 other patients with cholangitis are presented.

2) Cholangitis is most commonly seen in patients over 50 years old and, in our cases, one-half had had previous cholecystectomy.

3) There is a highly variable clinical picture and the patient may present with only fever and no pain or jaundice.

4) Hepatic function and other laboratory studies are often normal during the afebrile period.

5) Intravenous cholangiography and alkaline phosphatase determination are the most helpful tools in the diagnosis.

6) Prompt surgery is indicated as soon as the diagnosis of obstructive cholangitis is made.

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Oxytetracycline

The FDA in December announced its decision to order recalled from the market oxytetracycline capsules, produced by eight manufacturers, because of FDA's determination that those products are of questionable value medically.

While Pfizer initially provided to FDA the results of its blood level studies on a number of oxytetracycline products, and made their expertise on this important drug available to FDA, in the end it was FDA's task to conduct its own studies and to decide what action to take in this highly complicated area.

This is another scientifically documented instance which demonstrates emphatically that drugs of the same generic name are not necessarily equivalent therapeutically.

The antibiotic oxytetracycline was discovered by Pfizer in 1949, and over the years has been manufactured and distributed throughout the world under the trade name "Terramycin". Since the expiration of the Pfizer patent in 1967, oxytetracycline capsules have been manufactured and distributed in the United States by a number of other companies under the generic name, oxytetracycline, or other brand names.

Pfizer's oxytetracycline capsules, marketed under the brand name "Terramycin", are not affected by today's FDA action, and remain on the market. Indeed, Pfizer's Terramycin capsules have been designated by FDA as the standard for blood levels that must be met in order for oxytetracycline products to be considered as satisfactory for certification by FDA.

Classification and Treatment of Seizure Disorders in Children

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Seizures are the most common neurological disorder of childhood, they have many different causes and the etiology in each child must be understood before treatment can be successful. A discussion of the classification and treatment of seizures is included.

SEIZURES ARE the most common neurological disorder of childhood, yet perhaps also the least understood. In ancient times epilepsy was considered the "Sacred Disease" determined by the Gods or by Spirits. Hippocrates stripped divinity from this symptomatology and considered it to have "a natural cause from which it originates like other afflictions." In the following centuries, epilepsy was considered a disease sui generis until Hughlings Jackson in the late 19th century wrote, "A convulsion is but a symptom, and implies only that there is an occasional, an excessive, and a disorderly discharge of nerve tissue and muscles." In the decades since, however, most of the world of medicine has not heeded this fundamental understanding, and the knowledge of seizure disorders has often been limited by dividing it as if it were a single disease instead of a varying symptom into "Grand Mal", "Petit Mal", and Psychomotor Epilepsy. The terms "Grand Mal", "Petit Mal", and Psychomotor are no longer sufficient for the classification of seizure disorders, because they are all too general and imprecise. Actually each is used to speak of a number of various situations that are quite different in cause, prognosis, electrical manifestation (EEG), and preferred treatment.

The term "Grand Mal" is completely non-specific, and any type of seizure from any cause may progress or spread within the brain to become a generalized convulsion or "Grand Mal" fit. It thus becomes mainly a measure of severity in the final end point of a great variety of various seizure disorders. Identical generalized convulsions (Grand Mal seizures) can come from such situations as cerebral anoxia, withdrawal of drugs or alcohol, spread from a chronic cerebral focus, hypoglycemia, and many other causes. When the generalized convulsion or "Grand Mal" seizure is observed one only knows that there is some condition affecting the brain, but has no knowledge as to whether it it acute or chronic, or whether it is caused by tumor, trauma, infection, intoxication, etc. No such entity as Grand Mal epilepsy can be defined.

The term "Petit Mal" implies a minor seizure or brief absence and is often used for any type of "small spell". This may be a startling spell, a momentary confusion or lapse of consciousness, a brief episode of movement of the lips, a raising or dropping of the head, or other brief mental or motor

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disturbance. These manifestations by no means always point to a single etiology or do they have a single cause or characteristic EEG finding (figs. 2a, 2b, 3 and 4).

There does seem to be a definite group of children with normal neurological findings and normal range of intellect who sometime between the age of *three and fifteen years* begin to have relatively frequent (15 to 20 a day) brief "stop and stare" spells with no evidence of focal beginning, and no (or rare) generalized convulsive seizures. These children have electroencephalograms with relatively *normal* background activity but show paroxysms of sudden, distinctly regular, bilaterally *synchronous three per second spike wave* discharges (fig. 1) which occur spontaneously and can usually be activated by *hyperventilation,* occasionally by photostimulation, and seldom by sleep. Electroencephalograms of siblings or relatives especially between the ages of three and 15 years may show similar though less prominent EEG findings and some also have similar seizures. With the approach of adulthood (12 to 20 years) the stop-stare spells tend to decrease or stop, and occasionally generalized convulsions may appear. Some such patients have these brief attacks only for a year or two at sometime during childhood and almost never any other disorder. These seizures are often reduced in frequency or controlled altogether by drugs such as *Zarontin®*, *Tridione®*, *Valium®*, and/or *Diamox®*. Even patients falling into this entity which is recognized as "typical absence" or "typical Petit Mal" are found to differ somewhat if studied intensively with television or movie recording of their seizures, repeated electroencephalograms, extensive personal and family histories, etc. Thus even the basic entity of "typical absence" may be in doubt. It may be that this "entity" is actually a cluster of various conditions, genetic and otherwise, rather than a single one.

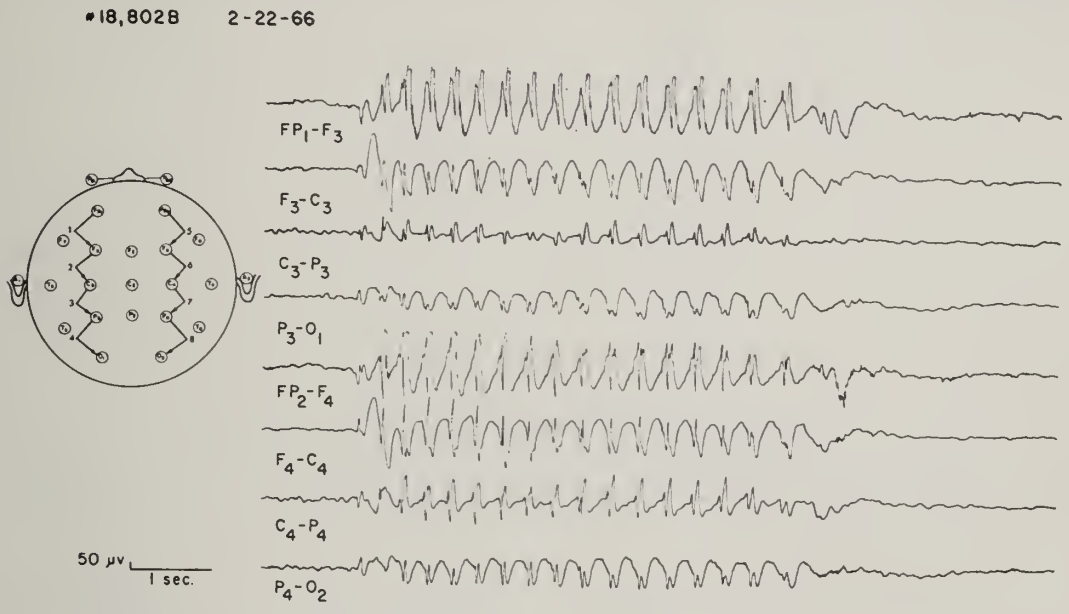
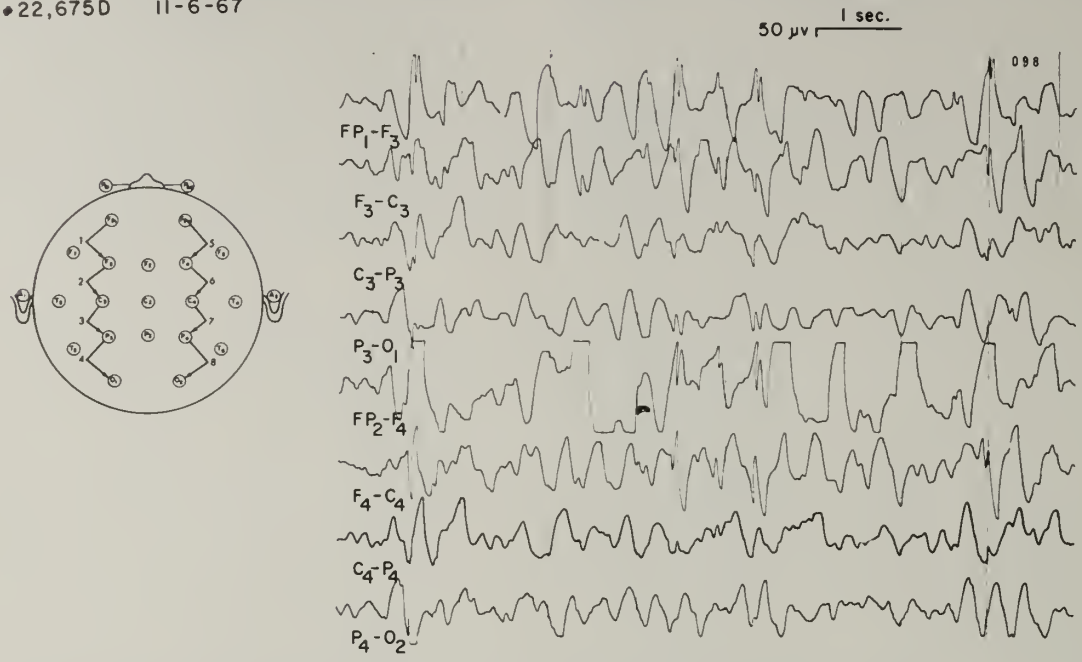


Fig. 1. EEG in typical absence (Petit Mal).

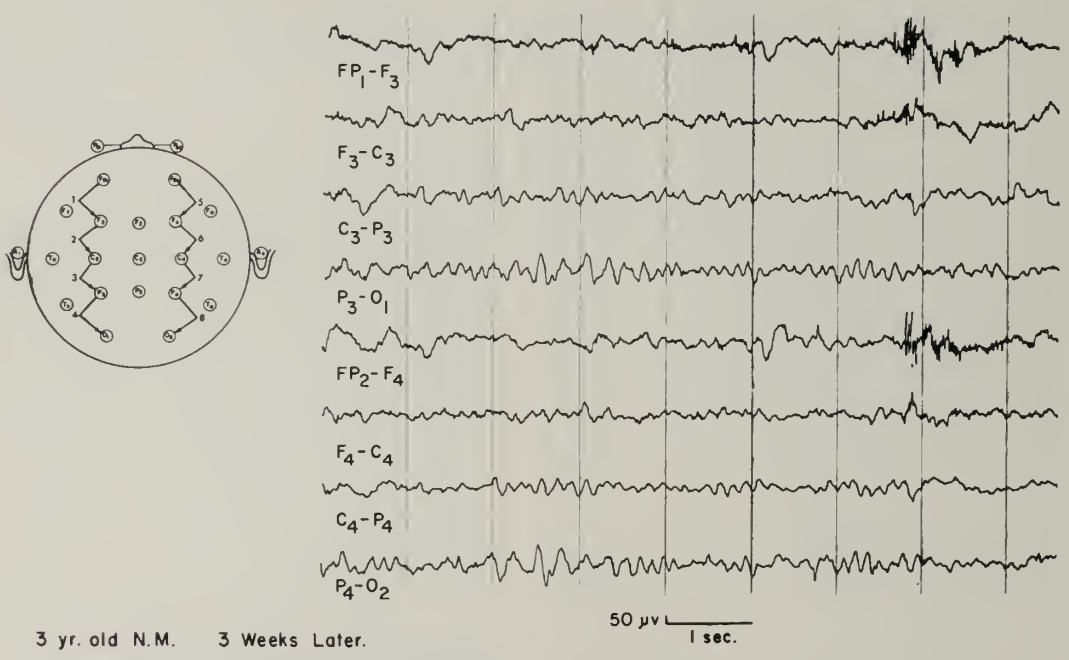
On the other hand, in many children with small spells conveniently called "Petit Mal", the clinical, neurological, and electroencephalographic picture is more chaotic. The attacks may begin in infancy and have more of a complex motor component, they may come on in mid-childhood and be infrequent, occurring weekly or monthly in-

stead of daily, and the electroencephalogram may show a focal discharge (temporal, frontal, etc.) or an irregular bilateral spike or poly-spike and wave discharge (figs. 2 and 4). There may be abnormal neurological findings, evidence of mental retardation or intellectual impairment, evidence of behavior disorder, some hyperkinesia, and often a history of birth injury, prematurity, cerebral trauma, possible encephalitis, drug



3 yr. old N.M. Measles 2 years of age. Brief episodes of head dropping >100x daily.
Dx'd "Petit mal" R_x = Zorontin, Gemonil, Volium, Tridione, Diamox. No Help.

Fig. 2a. EEG of a patient misdiagnosed as "Petit Mal". Note lack of typical 3 per second spike and waves.

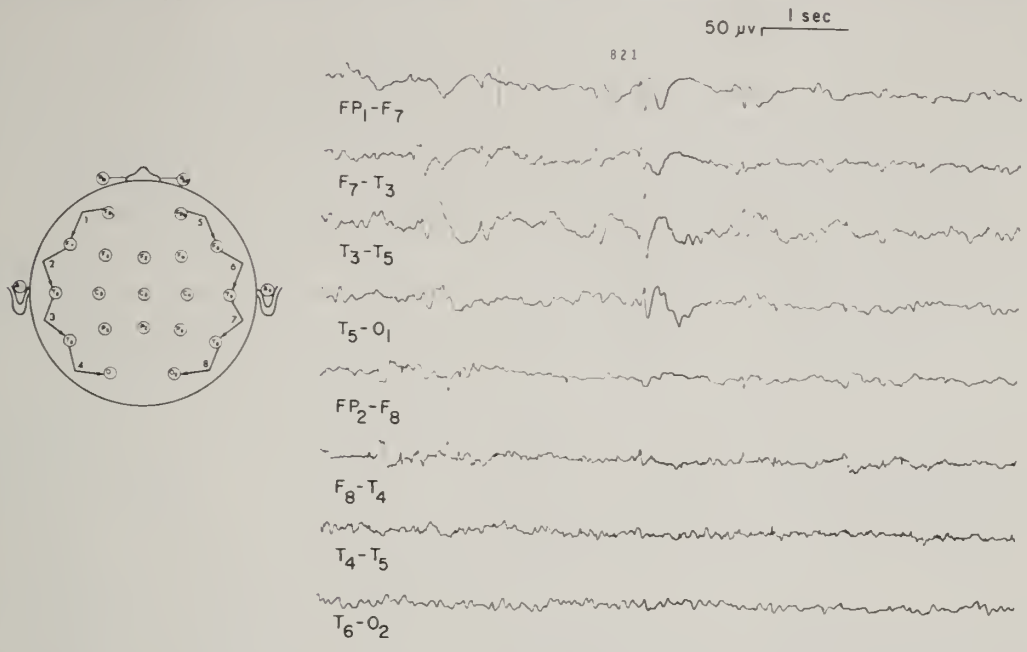


3 yr. old N.M. 3 Weeks Later.
No Seigures for One Week. R_x = Methsuximide

Fig. 2b. EEG of same patient after treatment with Celontin®.

intoxication, etc. It is thus evident that the term "Petit Mal" is not to be used casually,

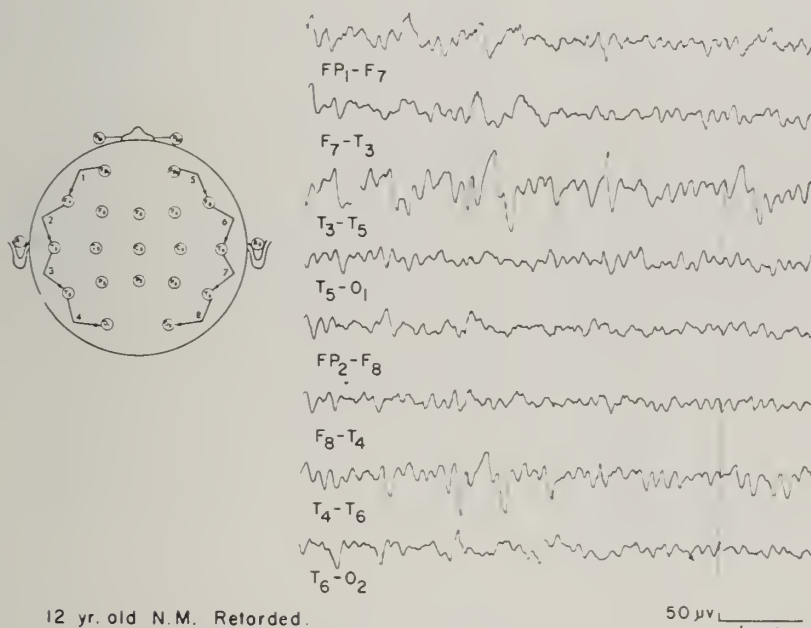
E.F.H. 6-20-68



17 yr. old W.M. Storing Episodes. No Postictol Drowsiness. Dx'd "Petit mol"
Before EEG. Tridione Foiled Good Response to Primidone (Mysoline) Given
After This EEG

Fig. 3. A temporal lobe seizure may be mistaken for "Petit Mal". Note left temporal spike and EEG.

M.C.H. 10-9-67



12 yr. old N.M. Retorded.
Brief Storing Spells Diognosed as "Petit mol"

Fig. 4. Note multiple spike foci (left mid temporal, and right posterior temporal).

Mal" will respond to the usual "Petit Mal drugs", and the other type of attacks will

and that careful study and differentiation should be attempted. This is particularly important since the more typical "Petit

more commonly respond to other medications such as barbiturates, hydantoins, etc.

Psychomotor epilepsy is more often a di-

agnosis made in the teens or adulthood, but this term also covers a multitude of entities referring actually to any type of focal seizure which does not necesarily have strong motor components, and which has components of behavioral, automatic actions, psychic states, etc. Such seizures are indeed usually associated with focal electroencephalographic changes particularly in the temporal lobe, but may be seen in patients with irregular bilateral discharges also. Focal "psychomotor" seizures are actually not really uncommon in childhood, but are more often brief and more often clinically mistaken for "Petit Mal". A young child is usually unable to describe his aura, and his brief temporal lobe seizure may look like the typical "Petit Mal" clinically (figs. 3 and 4).

At present, therefore, classification of seizure disorders should be made with some hesitation and humility, and on the basis of a variety of findings and factors such as a history, careful observation of the seizures, electroencephalographic findings on repeated recordings if necessary, and on the course of the illness including its response to medication. In children such classification is aided by paying particular attention to four factors, though often others are also useful. These include (1) patient's age, (2) clinical manifestations of the seizure disorder, (3) electroencephalographic changes, (4) when possible knowing the etiologic factors (table 1). The problem is complicated by the fact that different etiologic factors can produce a common clinical and electroencephalographic form of seizure. In general the etiologic factors can be detected easier in newborns and young infants, and with the passage of time the actual cause of the seizure may go unnoticed due to chronicity.

Febrile Convulsions*

Between the age of one and three years the most common type of seizure problem is that of the so-called "febrile convulsion". This classification without proper modification is as indefinite as the classifications of "Grand Mal", "Petit Mal", etc. The tendency to group all seizures occurring in the presence of fever in young children together under febrile convulsions leads to no useful classification either for treatment or prognosis. Once again each patient must be considered and the various factors added up to come to a proper classification. When this is done there does indeed seem to be a group which can be called to have "benign febrile convulsion". This group of children is characterized by the occurrence of a relatively brief generalized convulsive seizure coming on often before any other illness is recognized but associated with a relatively rapid rising temperature usually to the ranges of 102 to 104 degrees. Seizures coming on after a child has been sick with a febrile illness for two or three days are not usually benign. Seizures are usually limited to one or two rather than becoming repeated and frequent. Examination of the child reveals no focal neurological finding and reveals no neurological finding except generalized lethargy and perhaps bilateral changes in reflexes if done immediately after the convulsion. There is also no history of a specific cause for brain damage or involvement. An electroencephalogram done soon after the convulsion will show diffuse slowing, but one done a week or more later will show a normal record without evidence of focal change or seizure discharge. Fairly frequently there is a family history of similar febrile convulsions in childhood among siblings, parents, or relatives. In groups of children who have been carefully selected to meet all of these factors, very few have then gone on to have any chronic neurological or convulsive disorder. It appears that there is a definite group of children who have a lower threshold of seizures related to temperature during this age, and have no other disorder.

*This subject will be dealt with in more detail because of its practical importance.

TABLE 1

CLASSIFICATION OF SEIZURE DISORDERS IN CHILDREN

Clinical Manifestations	*Age (Approximately)*	*EEG*	*Etiology*
(1) *Infantile erratic seizures* (approximately 45% mortality in neonates, but survivors not necessarily "Epileptic").	Birth to months	Erratic spikes and/or spike and slow waves with tendency to spread to same or both hemispheres.	*Trauma, hemorrhage, anoxia, infections,* hypoglycemia, hypocalcemia, aminoaciduria, congenital anomalies.
(2) *Infantile Spasms* (Salaam Seizures, "hypsarrhythmia") often retardation.	6 to 18 months	Hypsarrhythmia: multiple cortical and subcortical spike foci interspersed with flattening of the record.	Meningoencephalitis, trauma. Unknown etiology in approximately 43% of cases.
(3) *Absence symptomatology:* I. *Typical absence* (usually free of other neurological complications)	3 to 16 years	Typical 3/sec. synchronous paroxysmal spike and waves (thalamocortical) Usually activated by hyperventilation. EEG usually normal between paroxysms.	*Unknown* Patients usually improve past adolescence. Genetics play a role in some of these patients. Organic etiology unusual.
II. *Atypical absence*			
a. *Akinetic absence* (other neurologic complications may be present)	any age	2/sec. spike and wave; non-specific EEG abnormalities may be seen between paroxysms.	*Unknown* These patients are more prone to develop major motor seizures.
b. *Myoclonic absence* (other neurologic complications may be present)	any age	Generalized, paroxysmal spike and polyspikes.	*Varied:* Viral, *degenerative* (e.g., unverricht) *Post-encephalitic* (e.g., subacute sclerosing encephalitis), *toxic* (e.g., lead encephalopathy).
c. *Psychomotor and Psychosensory* (see below)			
d. *Other brief absences* (staring, head dropping, etc.)	any age	Atypical spike and wave discharges.	*Varied:* Organic etiology more likely (post-encephalitic, etc.)
(4) *Focal seizures*			
a. *Psychomotor* paroxysmal behavior disorder, automatism, lip smacking or eye staring. (Usually with postictal drowsiness). In younger children, the clinical attacks can easily be mistaken for typical absence.	any age	Temporal sharp waves and spikes. Frequently, in younger children atypical generalized 2½ to 5 c/s s&w may be the main manifestation. Sleep a good activation.	Usually a chronic manifestation of *anoxia, trauma,* or hypoglycemia. Rarely due to tumor in children.
b. *Autonomic seizures* (e.g., abdominal epilepsy, paroxysmal headaches, or vomiting with abnormal EEG).	any age	Usually a typical synchronous spike and waves.* (focus in any part of limbic system).	Same as above.
c. Focal motor or sensory with or without Jacksonian march.	any age	Focal spike or sharp waves. In younger children, tendency for atypical synchronous generalized spike and waves	*Varied:* *Trauma, anoxia, vascular anomaly,* toxic metabolic (in children tumor very rare).
(5) Major motor (grand mal) a severe manifestation of any form of seizure disorder. Sometimes the sole manifestation.	any age	Varied	Varied (all above included).

*The EEG finding of atypical, synchronous spike and waves is a manifestation of cortical and/or subcortical spread of seizure discharge. It is as non-specific in localization as a major motor seizure is clinically.

TABLE 1—Continued

Classification of Seizure Disorders in Children

Clinical Manifestations	*Age (Approximately)*	*EEG*	*Etiology*
(6) *Febrile seizures:* (excluding meningocerebral infections, and septicemia) A. "Benign Febrile Seizures". One or a few seizures of short duration and generalized nature occurring during the first 12 to 24 hours of a high fever with no residual neurological finding.	commonly 6 months to 3 years	Generalized slowing postictally. Normal EEG 5 to 10 days later.	Unknown, but no evidence of any focal lesions. At times a family history of febrile seizures as infants.
B. (Other underlying causes). Such seizures may be severe and frequent, and seizures occur at times without fever. Focal seizures and neurological findings may develop. Seizures in very young infants and children over 3 years of age, associated with fever, more apt to be in this group.	Birth to 6 years	Some EEG abnormality present in most cases, and in many cases, rather severe abnormality of a great variety of anomalies depending on the underlying causes. Focal EEG changes are common though they may be found only with sleep.	Fever is an aggravating factor in bringing about the first seizures actually due to some other underlying pathology. The pathology includes the whole variety of causes of focal or generalized brain damage, and therefore includes all etiologies listed in the above table.
(7) *Sensory evoked seizures*: *Photic sensitive seizures*, pattern sensitivity, seizures after reading, etc. (rare).	Similar to typical absence group	Synchronous spike and wave discharges during photic stimulation.	*Unknown*
(8) Conditions stimulating seizure disorders in children: (clinical history and normal EEG helpful in diagnosis) a. Breath-holding spells. b. Syncopal attacks. c. Narcolepsy (uncommon in children). d. Hyperventilation syndrome (common in children and teenage group). e. Migraine. f. Conversion reaction.			

However, many "febrile seizures", and especially those coming on after three years of age, are related to a variety of disease and etiological agents which need to be diagnosed and treated. A considerable number of children who have their first seizure related to fever actually have a chronic brain damage or focus arising from birth injury or previous trauma or infection. This often becomes evident by the focal onset of the seizure, by focal neurological findings, and particularly by definite and often focal EEG abnormalities. More acute illnesses such as meningitis, brain abscess, etc., become obvious by the general physical and neurological examination, often by the fact that the child has been sick more than a few hours when the seizure first occurs, and by the tendency for the seizures to repeat rather than come on only once or twice as in the more benign condition. Two particular situations in which seizures occur with fever include the sudden fever and convulsions associated with a roseola infection, and the convulsions associated with Shigella infection.

Since febrile convulsions are such a common entity in early childhood, and since on the clinical basis alone a differentiation cannot be made for certain, it now seems best that each child with a febrile convulsion should be studied at least with a skull x-ray, electroencephalogram, and neurological examination so that those with definite lesions

and seizure disorders which are not benign can be started on early treatment, and a base line of study developed for the others upon which a decision can be made. It has also been the experience of the authors that any first seizure associated with fever occurring in a child over three years of age does not usually fall into the benign febrile convulsion group.

Treatment of Seizure Disorders

If at all possible, the purpose and plan for treatment should be pointed against the etiological factor. However, in day to day practice, unfortunately, this purpose cannot be practically achieved in many patients. Whereas in cases of infectious diseases of the central nervous system, or metabolic disorders (such as hypoglycemia), and toxic encephalopathies (such as lead encephalopathy), some effective measures can be taken to correct the abnormal situation, in the majority of other patients with seizure symptomatology, one is faced with a relatively chronic situation. In these cases, even if one is aware of etiologic factors in the past (such as trauma or anoxia), no effective measures can be taken to correct the etiologies. As a result, common treatment of seizure disorder has been carried on by help of anti-convulsants and sedatives.

The majority of the routinely used anti-convulsants (barbiturates and hydantoin derivatives) seem to have their main mode of action through prevention of spread and generalization of a seizure discharge primarily by exerting a stabilizing effect on the normal neurons, rather than directly suppressing epileptogenic focus. The oxazolidine group (Tridione, etc.), on the other hand, seem to have a more specific suppressing effect on the epileptogenic focus. However, this pharmacological fact does not make the latter drugs superior to the more commonly used anti-convulsants because of the fact that in clinical use of anti-convulsants, always one should keep the factor of toxicity in mind.

Commonly Used Drugs in Seizure Disorder:

1. Barbiturates:

A. Phenobarbital. An effective drug in most cases of seizure disorder—used as a primary or an adjunct treatment. This is a relatively safe drug. Serious side effects are rare; however, in some children, it causes irritability and excitability.

B. Metharbital (Gemonil®) less sedative and less effective than Phenobarbital. It should be tried if Phenobarbital does not work.

C. Primidone (Mysoline®) this drug is quite effective in the psychomotor and autonomic forms of seizure disorder. However, the drowsiness is the most important side effect, and for this reason, the drug should be started in small doses with gradual increase of dose.

D. Methobarbital (Mebaral®) has a similar effect as Phenobarbital and should be tried if Phenobarbital causes complications.

2. Hydantoin Group:

A. Diphenylhydantoin (Dilantin®) one of the most commonly used and one of the most effective anti-convulsants. It has less side effect of drugs as compared with the barbiturate group. Because of its prevention of transcortical propagation, it is very useful in a variety of seizure disorders. Main complications include cerebellar ataxia, dermatitis, gastric upset, and gum hyperplasia. The latter complication does not necessitate discontinuation of the drug in most cases.

3. Suximide derivatives:

A. Methsuximide (Celontin®). Very effective and potent anti-convulsant especially in cases with myoclonic seizures, akinetic seizure, and cases with atypical spike and wave discharge on the EEG. However, toxic complications of this drug are significant. The drug should be started in small doses with gradual increase of dosage.

The blood count and urinalysis should be checked periodically (toxic effect on bone marrow, kidney, and liver). Its use should be limited to cases which have not responded to above mentioned drugs.

B. Ethosuximide (Zarontin®). A very effective drug in the treatment of typical absence (see classification). However, nausea, vomiting, drowsiness, and anorexia prevent the use of this drug in every case of typical absence. Also, in a few patients, the drug has toxic effects on bone marrow.

4. Oxazolidine group:

A. Trimethadione (Tridione®)

B. Paramethadione (Paradione®). This group of drugs is effective in the treatment of typical absence. However, the use of these drugs is markedly limited because of their multiple, and severe toxic complications (skin rash, sore throat, bone marrow suppression, liver toxicity, kidney toxicity, and photophobia).

5. Diazepam (Valium®). This drug is very effective in the treatment of typical absence, myoclonic seizures, and status epilepticus. The side effects are minimal, and mainly are a problem when the drug is used intravenously for status epilepticus (rapid injection or mixing with intravenous fluids can cause precipitation).

6. Adrenocorticotropine (ACTH). This drug in relatively large doses seems to have a specific therapeutic effect in hypsarrhythmia (figs. 5a and 5b). It does not seem to be effective in any other form of seizures.

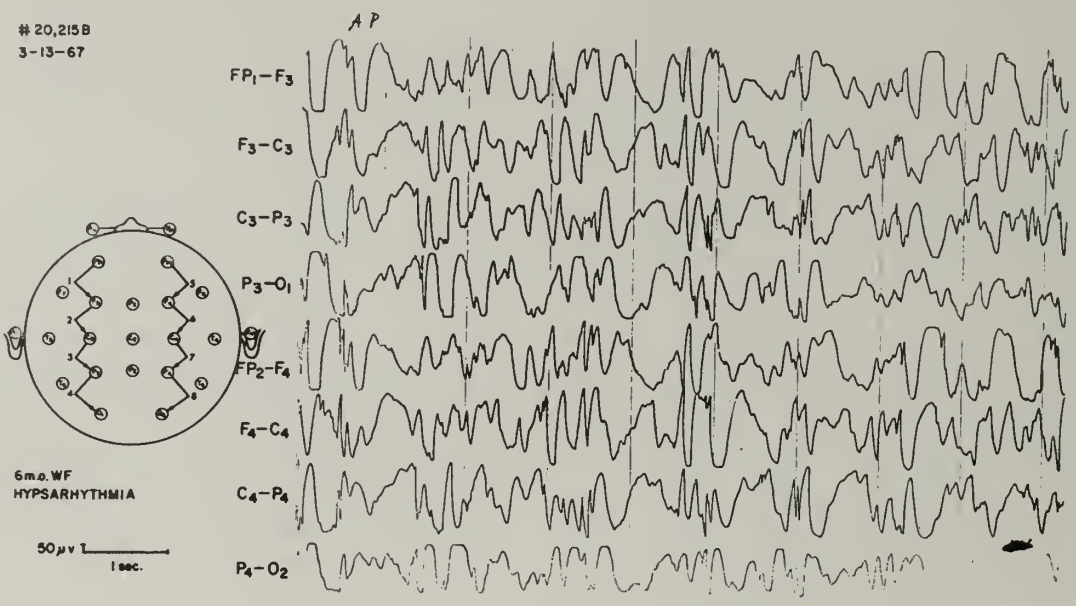


Fig. 5a. Hypsarrhythmia before treatment.

7. Acetazolamide (Diamox®). This carbonic anhydrase inhibitor is a good adjunct in treatment of seizure disorders, especially in female patients who have more frequent seizures prior and during menstrual period; and in combination with Tridione for typical absence (Petit Mal).

8. Nitrazepam (Mogadon®). Effective in hypsarrhythmia, and myoclonic seizures.

Besides the above mentioned drugs, other measures may be effective in treatment of seizure disorder. Ketogenic diet seems to have a beneficial effect in refractory cases of seizure disorder, especially in young children. However, it is not very practical, and its use is limited because of the unpleasant diet and detailed meticulous instructions which at times the family of the patient cannot follow properly.

Principles of Treatment of Seizure Disorders

1. If at all possible, a less toxic drug should be used.

2. Even though many times a combination of two anti-convulsants works better than one anti-convulsant alone, multi-drug therapy should not be the initial treatment of choice. The treatment should be started according to the type of seizure by a relatively less toxic drug of choice for that type of seizure, and if not successful, later on an adjunct should be added.

3. If up to three anti-convulsants used simultaneously are not effective in the control of seizures, it is not advisable to add a fourth drug. It is better to discontinue one or more of the drugs and try a different anti-convulsant.

4. It should be again emphasized that if at any time a correctable etiological factor is found, treatment should be pointed towards correction of the pathogenic factor (e.g., hypoglycemia; lead intoxication) rather than symptomatological treatment of seizure disorder alone. For this reason, a seizure disorder requires a complete laboratory work up with skull x-ray, EEG, fasting blood sugar, serology, serum calcium and phosphorus, and complete blood count as routine procedures. Other tests are to be added when particular pathological states are suspected.

5. Whereas minor seizures, and minor seizure status (epilepsia partialis continua) do not demand extremely aggressive, emergency treatment, a major motor seizure ("Grand Mal") demands emergency and aggressive treatment because of the anoxic complications and secondary anoxic brain damage, which always accompanies this condition in different degrees of severity.



Fig. 5b. Same patient after treatment with ACTH. Note the significant EEG improvement.

6. Each patient with seizure disorder should be considered as an individual patient, and the following recommendations for different types of seizures as only a guideline; keeping in mind the fact that only through a trial and error process can one reach the optimal control of seizure disorder in many patients.

Treatment of Choice in Different Forms of Seizure Disorders

1. Infantile erratic seizures: Dilantin® and/or Phenobarbital*.
2. Infantile spasm (hypsarrhythmia):
   A. *ACTH*
   B. Mogadon® (Experimental)

3-I. Typical absence: Drugs of choice are one or a combination of the following in order of preference:

*Dosage in infants: Diphenylhydantoin 0.2-0.3 gm per sq. M. body surface per 24 hours. Phenobarbital 0.1 gm per sq. M. body surface per 24 hours. Methsuximide 0.6 gm per sq. M. body surface per 24 hours, in divided doses.

A. *Zarontin®*
B. *Valium®*
C. *Tridione*
D. Diamox

3-IIa. Akinetic absence:

A. *Dilantin®*
B. *Phenobarbital*
C. Celontin®
D. Valium®

3-IIb. Myoclonic absence:

A. *Dilantin®*
B. *Mogadon®*
C. *Phenobarbital*
D. *Celontin®*
E. *Valium®*

3-IIc. Psychomotor absence: (see below)
3-IId. Atypical absence: *Dilantin®*

4. Focal seizures:

4a. Psychomotor

A. *Mysoline®*
B. *Dilantin®*
C. Phenobarbital

4b. Autonomic seizures:

Same as above.

4c. Focal motor or sensory seizures:

A. *Dilantin®*
B. Phenobarbital
C. Celontin®

5. Major motor seizures ("grand mal")

Every attempt should be made to identify, if at all possible, which of the above seizure disorders are the main factor. According to the type of seizure the above list should be used. In patients who do not have any other manifestations but major motor seizures, treatment of choice is *Dilantin®*, *Phenobarbital,* or a combination of the two or Celontin.

6. Febrile seizures:

Some physicians take the attitude that all febrile seizures should be treated by regular anti-convulsive medication for a number of years. This is based on the fact that a few infants who have severe generalized convulsive seizures seem to suffer some damage from such seizure episodes alone and that this then seems to set the stage for a more chronic condition. There is, however, little evidence that this really occurs in the benign group of seizures or that a small amount of regular medication will prevent it. This is more apt to occur with seizures associated with infection such as meningitis, or particularly roseola, or with some intoxication such as lead poisoning. If a chronic condition with definite EEG abnormality is discovered then a regimen of regular anti-convulsant medication for four or five years certainly seems indicated.

The following approach is generally recommended in the therapy of patients with febrile convulsions:

(1) After proper study, that group which appears to fall clearly into benign febrile convulsions would be given no regular anti-convulsant medication. The parents would be given elixir phenobarbital and told to give this along with aspirin at the onset of any cold or fever and at the same time to consult their general physician or pediatrician. If any recurring infection in tonsils or ears is present this should be treated in a proper fashion.

(2) If more than one or two febrile convulsions have occurred, or if there is doubt that the patient falls into the benign group, but no other definite diagnosis has yet been made, the child can be placed on small regular doses of phenobarbital with the same instructions to increase the drug along with aspirin at the onset of fever. A repeat study including electroencephalogram and neurological should be planned for one to two years later at which time if no seizures have occurred and no old findings arise, the medication can be stopped.

(3) If, however, study indicates a definite cause for the seizures or if the seizures occur without fever and particularly if the

electroencephalogram shows a distinct abnormality in the form of focal or generalized epileptiform discharge, then the patient should be placed on anti-convulsant medication consisting of either Dilantin, Phenobarbital, or Mysoline, and even if this controls the seizures completely, the patient should continue such medication for a five year period with repeated studies of EEG and neurological examination at one or two year intervals.

In considering the problem of febrile convulsions it is well to be familiar with the various thinking and advice in this area. In general, Dr. Sidney Carter[6] has recommended anti-convulsant treatment of essentially all children with febrile convulsions for a fairly long period. On the other hand, Dr. Gordon Millichap[14] has recommended an approach more near to that outlined above.

7. Status Epilepticus:

In no other situation related to seizures in children is an etiologic diagnosis so important as in the child who presents with repeated seizures without regaining consciousness between seizures, or the so-called status epilepticus. It is true that such repeated seizures may be due to an old chronic condition with a chronic EEG focus especially if anti-convulsants have been stopped abruptly, but if no history of previous seizures or anti-convulsant medications is obtained then an acute illness must be assumed as the cause. This may be a poisoning, hypoglycemia, meningitis, encephalitis, or electrolyte imbalance, or a great variety of other acute causes. If at all possible an intravenous puncture should be made (using the femoral or jugular veins if necessary) and blood obtained early for laboratory study as to blood count, sugar concentration, toxic agents, etc. At this same point, intravenous medications should be given slowly. It is usually best to begin with a reasonably large dose of intravenous phenobarbital or Valium, and if this does not control the seizures then follow this with either additional dose of the same medication or even paraldehyde. It appears that a fairly large dose given early will tend to stop convulsions whereas small doses given repeatedly over a longer period of time even though the total amount may be the same will not stop the convulsions. While this is being done the search for the underlying cause of the status should continue, and if it is found then the cause itself should be treated with intravenous fluids, antibiotics, neurosurgical procedures, etc. If the original fairly large doses of intravenous phenobarbital, Valium or paraldehyde or all three are not effective then it is advisable to have the child seen by an anesthesiologist and go ahead with a quick acting barbiturate under anesthetic supervision. It is always imperative in treating status to have available a respirator and means for maintaining the respiration of the patient.

Recently the early recording of the electroencephalograms, the use of the echoencephalogram, skull and chest x-rays, rather broad chemical tests, and electrocardiogram have become available even in the emergency room, and such rather complete studies can be carried out quickly in the child with status.

In general, the common *mistakes* made have been:

(1) Not to give enough intravenous medication early when the child is seen.

(2) Not to pursue the studies leading to a diagnosis of the underlying etiology.

(3) To end up giving too much sedative over a longer period of time or too much too fast and producing respiratory arrest by severe sedation. Each case must be handled individually and each case is an emergency. Along with the other studies, if the child does not have papilledema or evidence of increased intracranial pressure, a cerebral spinal fluid examination should be made fairly early in the course of the study.

8. Photosensitive seizures:

Treatment is similar to typical absence treatment.

9. Surgical treatment for seizure disorders is very limited in children. Hemispherectomy is occasionally helpful in patients with severe cerebral hemispheric pathology, and intractable seizure. Removal of a hemispheric tumor may be beneficial in the control of seizures in rare cases (these patients with slow growing tumors are usually characterized by lack of response to medical treatment).

Discontinuation of Treatment: Three major requirements for discontinuation of therapy should be met: (1) Patient should have no seizures for three years. (2) EEG should have returned to normal. (3) No other neurologic deficit should be present (e.g., retardation, etc.). After discontinuation of medications, patients with typical absence are less likely to have recurrence of seizures. Patients with focal type seizures, on the other hand, are more likely to have recurrence of seizures and need a permanent treatment.

Summary

The classification of seizures as "Petit Mal", "Grand Mal", and "Psychomotor" is inaccurate and misleading. Seizure is a symptom with many causes. For a more successful treatment of seizures, four major factors should be considered: Etiology, clinical manifestations of seizures, EEG findings, and patients age. Treatment of choice in the common forms of seizures in children is discussed.

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The Management of Intractable Pain

Present Status and Future Expectations

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Pain is an adaptive phenomenon, but when no longer useful as a warning, it is disintegrative and requires relief by whatever means are available.

WHEN IN 1811, Sir Charles Bell discovered the difference between sensory and motor nerve roots, it became inevitable that neurosurgeons would become intimately involved in the management of intractable pain.

The finding that sensation could be abolished without affecting movement laid the foundation for clinical pain surgery, and since the early part of this century many types of lesions of the central and peripheral nervous systems have been made in attempts to relieve pain. So far, despite considerable success, the perfect solution has escaped us —perhaps because of misconceptions of the nature of pain.

Pain has many familiar qualities and is a complex experience. Even in the face of this complexity, until recently pain has been thought of as a singular "sensation", conducted by neurons of the spinal ganglia, through a synapse in the dorsal horn of the spinal cord and the lateral spinothalamic tract to the thalamus where it was "perceived". While this is consistent with some clinical data, many observations are inconsistent with this model. First, only a few "pain fibers" of the lateral spinothalamic tract actually reach the thalamus, and "pain" receptors, the free nerve endings, subserve other sensations as well. Furthermore, lesions in the lateral spinothalamic tract do not always eliminate pain, and pain may return in an altered, dysesthetic state, following what was initially a satisfactory lesion.

In recent years, this view has been modified, and attention has been directed to a more primitive, multisynaptic pathway represented in the reticular core of the nervous system as a "network" rather than as a well defined anatomical pathway. It is now known that some "pain" impulses are projected bilaterally in the lower brainstem, midbrain and basal thalamus,[1,2,5] quite apart from the classical "sensory areas", and it is believed by many that pain is not a specific sensation, but rather an experience resulting from interaction between these two systems. Thus it is that the complexity of pain is a function of its anatomy and physiology. In clinical terms, this means that a variety of techniques must be available to relieve clinical pain states, depending upon the unique needs of individual patients.

Pain is fundamentally an adaptive, protective mechanism in which tissue destruction or the threat of destruction signals a need for a behavioral change and the avoidance of pain. This behavior is as much a part of clinical pain as is the anatomical pathway. Thus, although pain is a common symptom in neurotic or depressed individuals, it must be emphasized that depression is also a result of chronic pain, and that neu-

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rotics also develop painful illness. Because of the confusion introduced by behavioral response to pain, the single most important factor in the management of intractable pain is *diagnosis*. A patient with a diagnosed painful illness requires therapy, no matter how confusing the behavioral component may be.

While aspirin or "minor" analgesics usually are sufficient in conjunction with sympathetic management of the behavioral component, narcotic drugs seldom if ever are adequate in the management of severe, *chronic* pain. It is common experience to find patients requiring ever increasing doses of narcotics in order to obtain decreasingly satisfactory pain relief. Rarely are these patients truly comfortable, despite the fact that some relief is obtained from their drugs. As dosage increases and tolerance to drugs develops, the entire situation is compounded by side effects and drug dependence. While pain is a protective mechanism, intractable pain, especially in malignant diseases, is a destructive force and should be treated prior to establishment of drug dependence. It is in these patients that surgical procedures are most useful.

Surgical Pain Relief

Surgical pain relief takes many forms and, because of limitations of space, cannot be completely discussed here. Some techniques, such as cordotomy, stereotaxic thalamotomy and rhizotomy, or sympathectomy are useful in destroying pain "circuits", while other procedures, such as cingulumotomy[3] modify patients' responses to disease. This discussion will be limited to procedures which I believe are most useful and most applicable to common clinical situations.

Rhizotomy, or section of sensory nerve roots is the simplest procedure, and has been utilized in virtually all cranial and spinal pain syndromes from tic douloureux to spinal arachnoiditis. Because of the considerable overlap in sensory dermatomes, it is necessary to section at least one and preferably two serve roots above and below those thought to be conducting the painful impulses. This denervates a considerable portion of the body, and such sensory denervation in areas such as the cornea or sole of the foot may lead to serious trophic problems. The sensory loss is permanent, and the procedure may be useful in benign diseases in patients who suffer pain from a relatively localized source. Because it is less useful in cases of widespread lesions, rhizotomy is of limited usefulness in management of malignant pain.

Cordotomy, or destruction of the anterolateral quadrant of the spinal cord in which the spinothalamic tract ascends to the brain, has been the mainstay of pain surgery for decades. A lesion in the spinal cord above the entry of the pain "signals" can sever "pain tracts" relatively selectively. This procedure as originally performed achieves satisfactory pain relief in about 50-70% of patients. Because the cord lesion invariably involves some descending tracts within the spinal cord, it may be associated with significant complications such as respiratory and bladder dysfunction, hypotension and ipsilateral weakness. These are usually transient, however, but in some cases the adequacy of pain relief also fails as the "sensory level" falls with time. Some patients with benign diseases may therefore outlive the benefits of cordotomy.

All these hazards are reduced by operating under local anesthesia, and in this circumstance, acceptable pain relief with a low mortality can usually be obtained. Nevertheless, open or "standard" cordotomy is a major undertaking in patients who are seriously ill, and cordotomy under local anesthesia can be a trying experience for both patient and surgeon. As a result, cordotomy was previously reserved for patients likely to survive longer than six months and was denied to many people whose short term need for pain relief, especially from terminal cancer, was no less severe.

In the past several years a newer tech-

nique has been developed which eliminates many of these drawbacks, and has extended the benefits of cordotomy to many patients who could not be adequately palliated previously. In this procedure, *stereotaxic* or *percutaneous cordotomy*,[8] no laminectomy or open manipulation of the spinal cord is required. The patient is positioned comfortably with only local anesthesia in a modification of the stereotaxic instrument used for placement of thalamic lesions, and a number 18 gauge needle advanced under image intensification x-ray control into the subarachnoid space surrounding the cervical spinal cord. Utilizing electronic measurement of tissue impedance as an aid to localization, an electrode is placed through the needle into the target area of the spinal cord, as calculated from the x-rays. After confirmation of the electrode's location by electrical stimulation of the spinal cord, a radiofrequency lesion is made and gradually enlarged. The patient's neurological status is monitored at each increment of the lesion, and thus it is possible to create only as large a lesion as necessary to relieve pain, and to avoid complications such as weakness. Furthermore, it appears that bladder complications are much less frequent than with "standard" cordotomy. While complications of the lesion itself, such as spotty analgesia, falling sensory levels or post cordotomy dysesthesias may still occasionally occur, the ease of the procedure, its minimal surgical hazard—the whole procedure takes only about an hour—makes this operation available to many patients who have previously been denied pain relief. I share the opinion of many other neurosurgeons that this procedure will replace the open cordotomy, as it already has at the Medical College of Virginia.

Pain Relief in the Future

As already implied, despite the advantages of percutaneous cordotomy, no single procedure has yet been devised which is universally applicable or successful. This raises the question of what the future holds for development of new techniques of pain relief.

Because of the bilateral and diffuse representation of some of the pain system, it may be that no single *lesion* in the nervous system will ever be capable of altering pain permanently. Alternative means of modifying pain transmission rather than destroying pain pathways are now being sought.

The newest theoretic consideration of pain mechanisms is currently under investigation.[6] This theory states that pain represents a pattern of afferent input to the nervous system based to a great extent upon the size of fibers carrying messages from the painful parts. The theory holds that a mixed sensory input reaches a central site with large fibers inhibiting transmission of pain and small fibers encouraging the transmission of painful impulses. Relay to central structures depends upon specific cells in the substantia gelatinosa of the cord and activity of these cells depends upon a balance of input to it from both the brain's control centers and the periphery. There is considerable interest in this proposition, and, based upon it, a number of interesting and potential procedures are being tested in man.

The dorsal column of the spinal cord contains large fibers which project to areas of the CNS known to respond to painful stimuli. Chronic stimulation of these fibers in patients with severe pain, using a telemetered stimulus similar to that used in cardiac pacemakers, has provided pain relief in the form of "elevation" of the pain threshold.[7] This technique allows the patient to stimulate himself and to "turn off" his pain whenever he must, simply by turning on his external stimulator. The advantage of this technique is that since there is no destruction of neural tissue, it exacts no "price" for pain relief. It is ideally suited for patients in whom bilateral cordotomy is not advisable or who are likely to "outlive" effects.

We will soon be participating in a national study of this modality of pain relief,

and if the technique is truly feasible, many patients now condemned to chronic pain will benefit immeasurably.

One of the characteristics of pain is that its appreciation is variably dependent upon the situation in which pain is experienced. Battlefield observations of soldiers with severe but painless wounds are well known examples of the brain's influence over its own perceptive functions. The physiology of this influence is as yet unknown, although there are undoubtedly areas within the brain capable of inhibiting pain. Cases have been reported in which brain stimulation through implanted electrodes inhibited pain in man[9] and this promises to be an important area of investigation in years to come.

Conclusion

Pain is an adaptive phenomenon, but when no longer useful as a warning, it is disintegrative and requires relief by whatever means are available. Stereotaxic cordotomy is the treatment of choice in most malignant pain states, while rhizotomy remains useful in benign diseases. Newer techniques will rely on modification of the nervous system's intrinsic ability to control painful experience, and may ultimately provide more universal "relief" of intractable pain.

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Clinical Center Study of Periodic Paralysis

The cooperation of physicians is requested in the referral of patients with periodic paralysis for a study of new therapeutic agents being conducted by the National Institute of Neurological Diseases and Stroke at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

On completion of their studies, patients will be returned to the care of the referring physician who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone: W. King Engel, M.D., Clinical Center, Room 10-D-18, National Institutes of Health, Bethesda, Maryland 20014, Telephone: 496-6191 (Area Code 301)

Clinicopathological Conference . . . .

Young Girl with Renal Failure

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Clinical History

A 19-year-old, single, white female was admitted to the Medical College of Virginia Hospitals on 8/27/63 with a chief complaint of a "tumor on my back". The patient had been fairly well until February, 1963, when she had a bout of influenza. Shortly after this, her weight fell from her normal weight of 90 pounds to 80 pounds. She noticed that she was becoming exceedingly tired and her vision had become blurred. She was seen by her local physician in April at which time she was given a transfusion with considerable improvement in her symptomatology. Her anemia again recurred two weeks prior to admission and she received three units of whole blood. She had noticed the appearance of two hard, inflamed-appearing masses over the lower spine lateral to the sacrum about two months prior to admission. She had also had some non-painful swelling of the middle finger of her right hand.

Review of Systems: HEENT—negative except for the visual disturbance noted in the present illness. Cardiorespiratory—she had had persistent cough since her bout of influenza which was non-productive. GI—negative. GU—she denied any chills, fever, edema, dysuria, hematuria, or costovertebral angle tenderness. She did have nocturia 1-2x/night. Menstrual history—menarche at age 12 and periods were regular at their onset but since have become very irregular.

Past Medical History: Patient states that she has been known to have "pus on her kidneys" since age seven and had been treated on several occasions for kidney infections. The kidney infections seemed to occur in conjunction with or following upper respiratory infections. She had been told that she had some uremia four years prior to admission.

Physical Examination: B.P. 120/100; weight 84; P. 80; T. 98.6°. Patient was a small, poorly developed and poorly nourished, young white woman with mild acne who appeared to be in no acute distress. Funduscopic examination was within normal limits. Mucous membranes were of good color. The neck was supple. Thyroid was slightly enlarged and there was a hard nodule in the isthmus of the thyroid. Chest was symmetrical. Lungs were clear to percussion and auscultation. Heart was of normal size with a regular sinus rhythm. No murmurs or thrills were detected. The abdomen was soft. The liver, kidneys and spleen could not be felt and no other intra-abdominal masses were detected. Hard, walnut-sized, movable masses were present over both ischial tuberosities which showed some reddening of the skin superficially. They were non-painful. The extremities were negative except for some swelling of the right middle finger. Neurological examination was not performed.

Laboratory Data: The urine was straw-colored, clear and acid with a specific grav-

ity of 1.008; a trace of albumin was present; sugar and acetone were negative. Microscopic examination of the urinary sediment revealed a moderate number of squamous cells and occasional round epithelial cells; 2-5 WBC/hpf and rare RBC. There were a moderate number of bacteria noted. Hemoglobin was 11.4 gm.%, white count 4,250/mm^3 with 75% neutrophils, 2% eosinophils, 16% lymphocytes and 7% monocytes. Blood sugar 106 mg.% BUN 136 mg.%. Serum sodium 126 mEq/1, potassium, 3.7 mEq/1, chlorides 88 and CO_2 23 mEq/1. Serum calcium 10.8 mg%, serum phosphorus 8.6 mg.% Serology was negative. Creatinine 4.7 mg%; creatinine clearance was 14 cc per minute.

An electrocardiogram revealed occasional ventricular premature contractions with an otherwise normal tracing. A flat plate of the abdomen revealed that the kidneys were very small. There was no evidence of nephrocalcinosis; calcification was present in the branches of the abdominal aorta. X-rays of the hands revealed lace-like character to the bony trabeculations and were markedly demineralized. There was extensive calcification noted around the middle finger on the right hand. There were dense, soft tissue calcific deposits present medial to the proximal phalangeal joint of the middle finger and medial to the head of the second metacarpal. There was evidence of resorption of the distal terminal tuft of the third digit and a fracture of the terminal tuft of the distal phalanx of the second right finger. There was also dissolution of the terminal tuft of the left thumb and fifth finger. Resorption was noted along the lateral aspect of the shaft of the middle phalanx of the second left finger. Films of the pelvis revealed similar changes in the region of the symphysis pubis. The renal tubular phosphate reabsorption was determined and was 66%.

On the 10th hospital day, the patient underwent an operation.

Clinical Discussion

Dr. Hershel Estep: There are several interesting facets of this case. I suspect that Dr. Moon did not invite me down here to talk about one of them, chronic renal failure, but I will have to discuss it anyway.

The case in point is a 19-year-old, single girl who was admitted complaining of a tumor on her back and we do not hear too much more about that. She was evidently in fairly good health until about seven months prior to admission when she had some kind of upper respiratory infection—it sounds like influenza—following which she developed symptoms consisting primarily of tiredness and weakness, although she sought help because of weight loss and some trouble with her vision. At that time, a rather severe anemia was discovered which required over a period of the next seven months, two transfusions. A couple of months prior to admission two hard, inflamed masses appeared over the lower spine lateral to the sacrum. Apparently these were not painful.

Review of systems revealed only that she had had some nocturia one or two times nightly presumably for several months. A very important point, however, was the report in the past medical history of treatment for recurrent renal infections on several occasions since age seven. Perhaps they occurred in conjunction with or following upper respiratory infections, but in any event there was good evidence for renal infection also.

The physical examination at that time revealed a poorly nourished and rather small girl much underweight. She had a systolic blood pressure of 120 and diastolic pressure only slightly elevated, and the fundi did not show changes of chronic hypertension. The thyroid was slightly enlarged and there was a hard nodule in the isthmus of the thyroid. The only other pertinent physical findings were the hard, walnut-sized movable masses present over both ischial tuberosities. There was some reddening of the skin but no ten-

derness. The extremities were negative except for some swelling of the right middle finger.

Most of the laboratory findings were those of chronic renal decompensation. Her urinalysis was remarkable in that there was only a trace of protein; however, there were numerous bacteria. The fasting blood sugar was normal, the BUN was 106 and creatinine 4.7—all indicating severe renal disease. The creatinine clearance was reduced, of course, but it was not as bad as I would expect with a creatinine of 4.7. Sodium and potassium were either low or borderline. Chloride was slightly depressed and she may have been mildly acidotic. Serum calcium was 10.8 and the serum phosphorus 8.6, indicating considerable phosphate retention.

Dr. Walker, would you discuss the x-ray findings at this time?

Dr. Barry Walker: This chest film was taken in December, 1967, during the patient's second admission. It is an anterior-posterior chest film and was taken when the patient was apparently too sick to stand up or sit up. A semi-recumbant AP chest film is very difficult to accurately evaluate as to heart size, position of diaphragms and possible early signs of congestive heart failure. However, I believe there is cardiomegaly on this film, in spite of the fact that it is an AP view.

This is a lateral film. The vertebral bodies in the thoracic spine have a rather peculiar sclerotic appearance—increased bone density and the trabecular pattern is somewhat prominent. The heart does not appear to be significantly enlarged in the lateral view. The anterior space is clear and so is the posterior cardiac space. The sternum is of interest in the lateral view. The first articulation of the sternum you can see is widened and the cortical surface on either side of the joint space in the sternum is quite indistinct. (Fig. 1) This is what is commonly associated with metabolic disease particularly parathyroid hyperfunction.

This is the flat film of her abdomen and a statement was made in the protocol that the kidneys were small. It is really very difficult even looking at these films under ideal circumstances to accurately evaluate the kidney size. The lower poles I can identify, but not the upper poles, and the kidneys do appear to be small and shrunken, but there is no evidence of nephrocalcinosis. The spine has an area where all the bones look more dense than usual and rather prominent with a coarse trabecular pattern. There is some calcification of the internal iliac arteries which is most unusual in a 19-year-old girl. This is not uncommonly associated with parathyroid disorder. In the lower part of her pelvis, there is a fairly extensive amount of soft tissue calcification and on the right side it projects through the ischial notch and probably is the palpable



Fig. 1. X-ray of sternum to show changes in first joint.

mass which she did have over the ischial spines. This amorphous calcification is really rather nondescript but uncommonly is associated with parathyroid dysfunction. Her symphysis pubis is frayed and indistinct. The cortical margins are gone and this is associated with generalized metabolic bone disease.

Probably the most pertinent finding in her hand is the middle finger. (Fig. 2) All the terminal phalanges of this hand are partially

resorbed and in the middle phalanx, there is a large cluster of soft tissue calcification of the type usually associated with calcified tophus with a secondary infection in it. The resorption of the distal end of the terminal phalanx is a complex differential diagnosis of primary or secondary hyperparathyroidism, frost bite, scleroderma, Raynaud's dis-



Fig. 2. X-ray of hand.

ease, psoriatic arthritis and a rare arthritis called lipodermatoarthritis plus a few other exotic disorders.

Dr. Estep: What do you think about the general calcification of the phalanges and the metacarpals. Is it generally diminished?

Dr. Walker: The general appearance would reflect parathyroid dysfunction because the trabecular pattern throughout is coarse. There is resorption of the terminal phalanges and in the middle phalanges, the cortex of the shafts is frayed and partly gone. This is the kind of thing we associate with primary and secondary hyperparathyroidism, but we cannot differentiate it any further.

Dr. Estep: Thank you, Dr. Walker.

The most striking feature of the whole case to me was the severe azotemia and the long history suggesting some chronic renal disease which had finally brought about destruction of enough renal tissue to result in marked azotemia and phosphate retention.

Now having said that, and considering the differential diagnosis of chronic renal failure, we may come up with some idea about its exact cause in this case. It would seem pretty clear that she had an infection at the time she was seen in the hospital with bacteruria. She had a history of recurrent renal infections, perhaps cystitis, perhaps pyelonephritis, dating from a very early age. The causes of chronic renal failure can be divided up usually into three categories: those due to post-renal obstruction, those due to failure of renal tissue itself, and those which are due to prerenal factors.

Of the post-renal factors, obstruction of the urinary tract is probably the most common and this can be due to a variety of factors—urethral strictures and calculi; prostatic obstruction in men; tumors, inflammations and crystals which may precipitate in the ureters and urethra on occasions. In addition to that, there are numerous bladder abnormalities which one must consider in any child who has recurrent infections. Unfortunately we do not have an intravenous pyelogram or anything else to tell us whether or not there may have been some obstruction and urinary retention, but certainly some urinary retention or anomaly must be looked for in children who have recurrent infections.

Obstruction of the renal veins by thrombosis or tumor or intraabdominal pressure seems quite unlikely in this patient. The duration of the illness is very much against it. Congenital abnormalities should be considered in young patients who have recurrent urinary tract infections. Muscular hypertrophy of the bladder neck and persistent valves, polyps and meatal stenosis should be considered. We have no information one way or the other whether or not these abnormalities might be present, but I simply

mention them to reinforce what my renal friends have always said about always looking into the possibility of an obstruction in anybody who has recurring infections.

Of the renal factors themselves which may result in chronic azotemia and renal failure, chronic glomerulonephritis and arteriosclerotic nephritis or nephrosclerosis are probably the most important. Some of those cases we used to call nephrosclerosis may well have been some variation of pyelonephritis. However, we consider them with diffuse diseases. Periarteritis nodosa is also a diffuse renal disease, but this is almost always associated with some hypertension. This patient, if she had hypertension of significance, must have developed it shortly before we saw her because there were no signs of chronic, longstanding hypertension. Disseminated lupus erythematosus does cause a diffuse disease with nephrotic syndrome, but there is very little to suggest that this diagnosis is responsible for our patient's renal failure. Of the other types of nephrotic picture which occur with renal failure, myeloma is unlikely because of age, and amyloid is possible, but again unlikely. There were no chronic non-renal infections which might account for secondary amyloidosis. There was no evidence of diabetes and, further, the picture was not that of nephrotic syndrome.

Of the circumscribed renal diseases that we should consider, the diagnosis which has the most evidence supporting it in our patient is chronic pyelonephritis. It is possible that she could have some congenital disease such as polycystic disease. However, these patients almost always have severe acidosis by the time they are first seen, and they have hypocalcemia. To my knowledge, none of them has been reported to have hypercalcemia. There is no evidence that she had a chronic infection such as subacute endocarditis with resulting infarction of the kidney due to multiple small emboli.

I think we can dispense with the prenatal factors in this case although some of you may disagree. There is very little evidence that she had renal artery thrombosis. She was much too young for the common type of arteriosclerotic plaques although there was some calcification of arteries which was shown on x-rays.

Fluid and electrolyte depletion may have aggravated existing renal disease when she had her influenza or other illness several months prior to admission, but certainly one could not blame her chronic failure on this particular abnormality.

Of the miscellaneous causes which can result in renal failure, those associated with some degree of hypercalcemia or hypokalemia are the ones which are the most common. Of these, Vitamin D intoxication and hyperparathyroidism are probably the most common causes of the hypercalcemic nephropathy. Sarcoidosis has been known to do this, although rarely, and eosinophilic granuloma or the histiocytosis x diseases are not associated with hypercalcemia but destroy the kidney by actual invasion of the peculiar cells of those disorders. The long term administration of milk and alkali resulting in the milk-alkali syndrome usually takes place in a setting of pre-existing renal disease. However, a few cases of renal failure have been reported where hypercalcemia and hypercalcemic nephropathy developed during the course of treatment of peptic ulcer with large amounts of absorbable alkalis and milk or calcium-containing compounds. Hyperparathyroidism is extremely unusual as a primary disease in young people. It does occur, of course, but between 30 to 50 years of age; ocacsionally as low as 20.

I think we must consider primarily, because of the level of the calcium which was 10.8 despite a serum phosphorus of 8, is that the patient had hyperparathyroidism. We have evidence for this on x-ray examination. The question whether this is primary or secondary or even tertiary, however, cannot be decided on the basis of x-rays as Dr. Walker has shown you.

Secondary hyperparathyroidism is the

commonest type of hyperparathyroidism which occurs in renal disease. This is because of the elevation of phosphate although acidosis itself may lead to some osteomalacia when associated with a reduced serum calcium. The reduced serum calcium which occurs with a high serum phosphorus is a primary driving force for parathyroid hormone secretion and renal osteodystrophy. The major early lesion which is produced is osteomalacia under these circumstances, although it is complicated a bit by the appearance of subperiosteal resorption on occasion and a little irregularity of calcification which makes you think that the patient also has osteitis fibrosa cystica. Osteitis fibrosa cystica only comes with excess parathyroid hormone secretion. In the beginning, this is not autonomous and results secondarily because of a low calcium. But by definition, anyone who has an elevated serum calcium has, if they have hyperparathyroidism at all, primary hyperparathyroidism, i.e. autonomous function of the parathyroids. Under these latter circumstances, the serum calcium can be elevated and parathyroid hormone secretion will not fall off. Unfortunately, we did not have any special tests other than a single tubular phosphate reabsorption determination which was 66% and which would probably be low whether or not she had hyperparathyroidism with this degree of renal disease.

The other type which we are now becoming more familiar with is tertiary hyperparathyroidism. This is the type which starts out as secondary and then becomes autonomous. This is a peculiar type of hyperparathyroidism because it is only autonomous in a special sense. It can be reversed under appropriate conditions and can be seen to vary from time-to-time; that is, it can seem to be autonomous at times and non-autonomous at other times. What made most people alert to the possibility that tertiary hyperparathyroidism might occur has been the discovery of patients who have had renal failure with many of the findings that our patient today has had, but who on transplantation developed hypercalcemia. The mechanism for this presumably is: there is renal failure; then phosphate retention eventually with decreasing glomerular function; this leads to hypocalcemia and at this time, secondary hyperparathyroidism. Something happens at this point. Secondary hyperparathyroidism is always associated with a low calcium, usually a low phosphorus except in this particular disease which we are studying today, that is in phosphate retention. So phosphorus can be low or high depending on whether chronic renal failure is present. Alkaline phosphatase is elevated. Calcium has to be low under these conditions, but then something happens somewhere along the line so that the patients develop autonomous function, increased TH secretion and hypercalcemia.

Not a lot of people with renal disease will develop moderate degrees of hypercalcemia despite the fact that phosphate retention has not really set in at that time. They maintain a normal serum phosphorus, however, by secondary hyperparathyroidism which decreases the resorption of phosphate. Sooner or later this is overcome, as in our patient and serum phosphorus increases, and anybody who has a phosphate of 8 should have a reduced serum calcium level. We have only one serum calcium level—I should caution myself as well as you that one swallow does not make a Spring, and we have had some mistaken diagnoses due to errors in collection of samples or in the laboratory determination of calcium, but I assume that Dr. Moon is not tricking me that badly.

I suspect that this was the sequence of events in this patient. She had her recurrent urinary tract infections, presumably pyelonephritis. Sooner or later apparently four years prior to her first visit here, she had evidence of azotemia with perhaps phosphate retention at that time. In any event, sometime between then and the time we saw her, she developed hyperphosphatemia with phosphate retention and reduced glomerular

function. These two things—acidosis or phosphate retention—could lead to hypocalcemia and secondary hyperparathyroidism. At this time her parathyroids were under her own control, under physiologic control, they were not autonomous and she had hypocalcemia with secondary hyperparathyroidism. This resulted in osteomalacia and a mixed picture of osteitis fibrosa. Sometime between then and the time we saw her, she developed autonomous parathyroid hormone function, i.e. her parathyroid hormone secretion was no longer under the influence of serum calcium levels. Even the higher levels she had of 10.8 mg/100 ml, and that is slightly elevated, was not enough to suppress her own secretions. This is not to say that some level may not have suppressed her, if we had her to 20 mg/100 ml or so, but in any event it occurred in the face of a high phosphate level which does indicate autonomy or tertiary hyperparathyroidism.

At this time, she then had accelerated bone resorption, but because of the high calcium and the high phosphate, she had irregular resorption and irregular deposition of calcium so we have some areas of sclerosis and some areas of resorption. She had a change at least one place in the right scapula I believe it was, Dr. Walker, that looked very much like a cyst. She then developed hypercalcemia and this may be relative or absolute depending on the level of phosphate. If her phosphate for instance were 6, this might not really be an absolute hypercalcemia—it might be a relative hypercalcemia, but in the face of 8 or 10 phosphate level, certainly this should be associated with a serum calcium level of 7 or 8 or perhaps as high as 9, but certainly not close to 11. So this is an absolute hypercalcemia. The hypercalcemia and hyperphosphatemia also led to ectopic calcification. Ectopic calcification is extremely unusual in osteomalacia which occurs with renal osteodystrophy unless there is elevated calcium levels.

There is one point that also makes me think that she did not have primary hyperparathyrodism and that is she had no nephrocalcinosis. Patients who develop hypercalcemic nephropathy with hyperparathyroidism do so because there is gradual destruction of the renal tubules and calcification of the distal tubules first, then the kidney in general, so that if the hypercalcemia is responsible for the renal failure rather than visa versa, then there is nephrocalcinosis.

We would say then, that the diagnosis is probably tertiary hyperparathyroidism on the basis of chronic renal disease, probably pyelonephritis, and the operation, whatever it was, if it was in the neck showed chief cell hyperplasia of all four glands and if it was on the ischial tuberosity as biopsies, it showed ectopic calcification.

Dr. Moon: It was on the neck.

There were some other physicians who saw this patient in the hospital. Dr. Kirkland, would you care to make any comments about the clinical course on this patient up to this point?

Dr. Richard Kirkland: Nothing up to this point.

Dr. Moon: Nothing to this point—we will give you a chance later. Is Dr. Royster here? No?

The pathology on the case for today will be presented by Dr. Chitale.

Pathological Discussion

Dr. Arun Chitale: I will begin by showing the pathology of the specimens excised by the surgeon. This specimen did consist of four or at least three and a half parathyroid glands. They are obviously enlarged and somewhat nodular indicating hyperplasia as the underlying pathological process and not an adenoma, for the latter usually involves a single gland. All these glands together weigh 3.2 gms and this is about 30 times the normal combined weight of the parathyroid glands, which averages about 120 mg.

Histologically, there are no adipose cells anywhere in these enlarged parathyroid glands and also a distinct nodularity is rec-

ognized. (Fig. 3) A trichrome stained section shows the nodularity of the hyperplastic gland a little better. Another reason for the nodularity of this type of hyperplasia is the presence of variable cell structure. There are dark chief cells and groups of oxyphilic cells in other areas. In some portions, vacu-

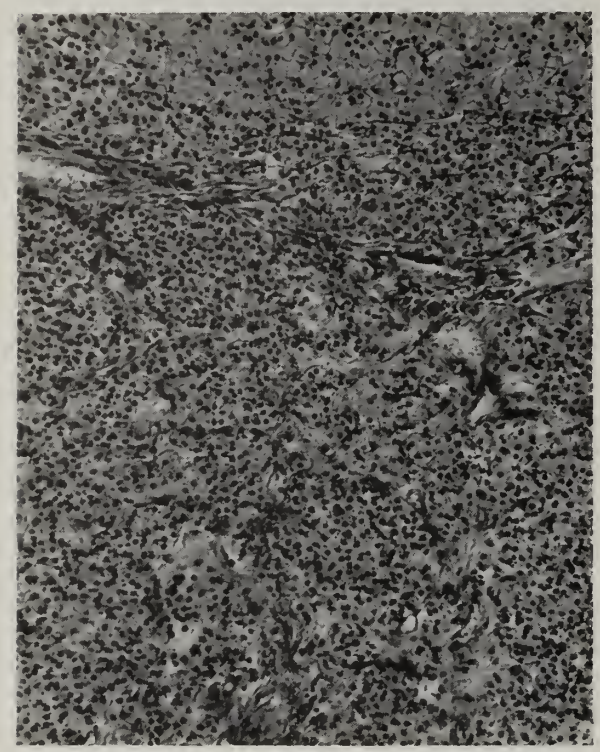


Fig. 3. Histology of parathyroid glands.

lated chief cells are prominent. Groups of acinous structures are also not uncommon in this pathological process. The predominant type of cell in these glands was the dark chief cell and indeed we call this a "chief cell hyperplasia". At this point, it may be emphasized that chief cell hyperplasia can be seen in primary hyperparathyroidism as well as in the secondary hyperparathyroidism.

Histological patterns identical to those seen above are also characteristic of an adenoma. But an adenoma involves only one of the four parathyroid glands while in this case, all parathyroid glands are enlarged and, therefore, the pathological process is one of hyperplasia and not that of an adenoma.

A prior knowledge of the exact pathological process in a given case of hyperparathyroidism has an important bearing of the type of surgery appropriate for the case. For in hyperplasia, a subtotal parathyroidectomy will have to be done, i.e. three and a half glands will have to be removed. In the case of an adenoma, excision of the adenoma results in a cure.

There are different pathological processes involving the parathyroid glands in association with hyperparathyroidism. In primary hyperparathyroidism, the second commonest pathological process is one of hyperplasia. The hyperplasia could be of two kinds. One is called a clear-cell or Wasserhelle type and the second is called the chief-cell type. The Wasserhelle or clear cell type of hyperplasia is characteristically seen in the primary type of hyperparathyroidism, and this is never seen in the secondary type. In our case, such a clear cell hyperplasia was not seen. The chief hyperplasia as seen in the primary hyperparathyroidism and the one seen in the secondary hyperparathyroidism are indistinguishable histologically.

For the sake of comparison, an adenoma shows the presence of compressed normal parathyroid gland outside the capsule of the adenoma. This is the only histological feature that separates an adenoma from a chief cell hyperplasia when only one parathyroid gland is submitted for examination.

It may be interesting to see the different incidences of different pathological processes in hyperparathyroidism. The group at the Massachusetts General Hospital in Boston has one of the largest series in the world and that series reveals certain interesting statistical observations. In 1958, they described 10 cases of chief cell hyperplasia which formed 5% of all the entities. And seven years later, they published another series in which the incidence of chief cell hyperplasia jumped from 5 to 11.75%.[1,5] This statistical information emphasizes that the chief cell hyperplasia is more common than is generally recognized and this is important for the surgeon, who often regards primary hy-

perparathyroidism synonomously with a parathyroid adenoma. The therapeutic implications are obvious in this situation.

To compare the incidence of chief cell hyperplasia in our hospital, examination of all the cases in the last 18 years at MCV shows that hyperplasia was diagnosed in 40% of the cases. This figure is not accurate since a complete evaluation of MCV cases is not complete. At any rate, what is obvious is that the chief cell hyperplasia involving all four parathyroid glands is not too uncommon an entity although we know that adenoma is the commonest finding in hyperparathyroidism.

So much for the pathology of the glands excised by the surgeon. At this stage, we do not know whether the patient had a primary hyperparathyroidism or whether she had a primary renal problem which stimulated a secondary or tertiary type of hyperparathyroidism as indicated by Dr. Estep. Dr. Kirkland might like to mention the further course of this patient after the operation.

Dr. Richard Kirkland: I saw this patient first in 1963 and went through the same reasoning processes as Dr. Estep did that the calcium should not be high in secondary parathyroidism and I felt that the patient had hyperparathyroidism and concluded that she had "probable secondary-primary hyperparathyroidism". At that time, the term "tertiary hyperparathyroidism" had not been introduced.

It was of interest that after the surgery was performed, these subcutaneous calcifications in her fingers and in the ischial tuberosities all disappeared. The patient felt much better. There was a slight drop in the BUN, but not below 100.

She lived a semi-invalid life until 1967 when she died of chronic uremia. I thought that this patient was particularly important because it seemed to me to raise at that time a new concept about production of adenomas and of hyperplasias of the endocrine organs. I had felt for sometime that endocrine tumors might develop as a result of chronic physiologic stimulation and might eventually result in autonomy of the endocrine organ. I think this is being accepted and I believe we should really look for more such patients. It is of interest to me that Albright in his book on hyperparathyroidism does mention that the cause might be something which leads initially to hypocalcemia of a chronic type which later on results in autonomy or what he would then call primary hyperparathyroidism.[2] That would be the same as tertiary, I believe. So this was the diagnosis that was made clinically on the patient.

Dr. Chitale: This patient died four years after the surgical excision of the parathyroid glands and the following are the important autopsy findings. The patient was of a very small stature for her age and she also had a considerable kyphosis. However, the prosecutor did not find any subcutaneous or soft tissue foci of metastatic calcification, which apparently regressed after the parathyroid surgery.

The kidneys, each weighing 40 gm, are markedly contracted showing a strikingly uniform granularity such as seen in the classical chronic glomerulonephritis. There was no evidence of obstructive uropathy nor did we find any renal calculi. Microscopically most of the kidney appears scarred and atrophic. A few glomeruli that might be functional are present. Such a histological appearance is the end stage of most chronic renal disease. However, the few surviving glomeruli show no evidence of endothelial or epithelial proliferation which would be expected in glomerulonephritis. Thus it is concluded that this process was indeed chronic pyelonephritis. A healed interstitial nephritis could be another possibility but this problem cannot be settled on the basis of histology alone. In view of the history, a diagnosis of chronic pyelonephritis with extensive scarring is acceptable. It may be emphasized that there is no evidence of nephrocalcinosis in these kidneys. Thus, in the absence of renal calculi or nephrocalcino-

sis, we are absolutely certain that the primary disease in this patient was chronic renal disease, which was responsible for hypocalcemia and hyperphosphatemia followed by parathyroid hyperplasia and secondary hyperparathyroidism in the sequence already discussed by Dr. Estep.

The only parathyroid gland found at autopsy weighed 80 mg and revealed chief cell hyperplasia. This was expected because the stimulus of chronic renal disease in this patient persisted. At autopsy, the section of vertebral body shows a marked lacunar resorption with osteoclastic type of giant cells. A trichrome stain brings out the fibrosis in the bone marrow, which is also part of the process of osteitis fibrosa. This stain also reveals the presence of immature or fiber-bone superimposed on mature or woven bone. The immature bone is poorly or not calcified. This change is characteristic of osteomalacia. In fact, the bones show osteomalacia, changes of hyperparathyroidism, i.e. osteitis fibrosa, and it also shows a marked sclerosis. These three processes involving the bone were put together and described by Stanbury in 1957 under the title of "Azotemic Renal Osteodystrophy".[3] In primary hyperparathyroidism, the only change one will see is the osteoclastic resorption but no changes of osteomalacia. Stanbury has shown many radiographs in this excellent article about the radiological diagnosis of the presence of osteomalacia and osteitis fibrosa in the same bone in chronic renal disease of long standing. Metastatic calcification was found in the heart and the arteries. In the heart it was present in the mitral valve and also the myocardium. The valve did not show any structural abnormality, and there was no reason to suspect a primary valvular disease.

Now I would like to discuss the term "tertiary hyperparathyroidism" which to me is redundant. In every case of serious chronic renal disease, one is going to find hyperplasia of parathyroid glands, which is almost always compensatory. This process is erroneously called secondary hyperparathyroidism. It should be labeled as secondary chief cell hyperplasia in chronic renal disease. It must be realized that in very few cases is this compensatory hyperplasia going to get out of hand and produce changes of osteitis fibrosa, as happened in this case. Then such a condition should be diagnosed as chronic renal disease with secondary hyperparathyroidism.

The following are some of the features of chronic renal disease with secondary hyperparathyroidism compiled after some review of the literature. First, only those cases of chronic renal disease which show bone changes of hyperparathyroidism are accepted in this group. In one series of 41 cases, 24 or 29 serious cases and eight of 12 milder cases had pyelonephritis as the primary renal disease.[4] The second commonest cause in this group was congenital obstructive uropathy. Next, ectopic calcification was seen in 23 of 41 cases in this series. It is very important to point out that metastatic calcification is typical of hyperparathyroidism and renal failure in combination. The reason for this, is high saturation of both serum calcium and serum phosphorus in this situation. In primary hyperparathyroidism, there is hypercalcemia but there is hypophosphatemia and, therefore, the concentration of these ions is not such that there will be metastatic calcification. If primary hyperparathyroidism produces nephrocalcinosis and chronic renal failure as it does in some cases, metastatic calcifications will be seen. On the other hand, in cases of primary chronic renal disease with secondary hyperparathyroidism, metastatic calcifications will always be seen. The next important feature of this group of cases is that the majority of the patients were very young. Why this is, we do not know. In any event, 20 out of 41 patients died before the age of 30 years and some of them were even under 20 years of age. The last but not the least important feature of this group of cases is a very prolonged duration and very gradual progres-

sion of the primary chronic renal disease. In 20 cases of the 41, the disease was present for 20 years.

Finally, one failure of renal osteodystrophy which has an important therapeutic implication may be mentioned. In early stages of chronic renal failure, the patient has signs of osteomalacia and large doses of Vitamin D are commonly used. But as the renal disease progresses and the compensatory parathyroid hyperplasia becomes autonomous, the parathyroid hormone excess comes into play. In this situation, Vitamin D treatment is going to be toxic. At that stage, one should suspect autonomous or secondary type of hyperparathyroidism and that an elective subtotal parathyroidectomy should be performed. This is exactly what was done in the present case.

Dr. Moon: Thank you, Dr. Chitale. Dr. Kirkland, did you have some other comment you would like to make?

Dr. Kirkland: There is another bit of evidence that chronic hyperplasia might become autonomous. I have seen one patient with hyperparathyroidism who on microscopic examination of the parathyroid glands showed hyperplasia in one gland, adenoma in another and carcinoma in the third and I think this is the progression of the disease.

Dr. Moon: Dr. Estep, would you care to say anything else in closing?

Dr. Estep: Just one thing. There is the question of autonomy in the patients who have long-standing hypocalcemia and then develop hypercalcemia. This is still undecided. The only evidence which indicates this in studies of a serious nature other than our speculations has been the extirpation of parathyroid glands in patients who have long term renal disease and who have hyperplasia and subsequently develop hypercalcemia. Either that, or in the post-transplant state, developed hypercalcemia and then had to have parathyroid extirpation.

In studies designed to show whether these glands can secrete PTH by immunoassay methods, whether they are under the control of calcium per se, or whether they are secreting autonomously, glands are incubated in a medium with high and low calcium concentration. PTH secretion in the presence of high calcium medium in normal glands was markedly reduced. This did not occur in patients who had their parathyroids removed following transplantation or before transplantation but developed hypercalcemia in the face of uremia. This is the only definite evidence I know of autonomy and even that I am not sure about.

Final Anatomical Diagnosis

1. *Chronic pyelonephritis, severe.*
2. *Secondary chief cell hyperplasia evolving into hyperparathyroidism.*
3. *Azotemic renal osteodystrophy.*
4. *Metastatic calcification of mitral valve, myocardium and arteries.*

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Cancer Trends . . . .

M. H. DONALDSON, M.D.

Edited by—

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Rhabdomyosarcoma

The incidence of soft tissue malignancies is virtually impossible to accurately determine, but probably comprises 10-20% of the various malignant tumors. They probably produce no more than 5-8% of all childhood malignant diseases being exceeded in number by leukemias and lymphomas, neuroblastomas, tumors of the central nervous system, Wilms' tumors, and bone tumors. Space does not permit discussion of all varieties of such tumors, nor would the rare occurrence and meager information of many of them warrant it. However, rhabdomyosarcoma does occur frequently enough to comprise the single largest group of soft tissue tumors, exclusive of the so-called unclassified sarcoma group, and therefore deserves some attention.

There are four histologic types of rhabdomyosarcoma—pleomorphic, alveolar, embryonal, and botryoid. The pleomorphic variety is numerically most common and is the type which is classically seen in adults and relatively uncommon in childhood. Pack and Ariel[1] have stated the upper portions of the extremities are most common primary sites, that metastases occur chiefly in the lungs, and that wide excision may occasionally produce prolonged survival or cure.

Considerable confusion is detectable in the literature concerning the other histologic types of this tumor. The alveolar and embryonal varieties may possibly be the same tumor,[1] but embryonal is the term more often used in the literature and is the most common type of rhabdomyosarcoma in children. The head and neck area is the most common anatomic area of origin, with the orbit the most common site of primary involvement in this area.[2] In fact rhabdomyosarcoma is the most frequent primary tumor of the orbital tissues.[3]

The most common presenting finding is a mass and pain in the area of the mass is the most usual complaint. When the embryonal rhabdomyosarcoma arises just beneath the mucous membrane and projects into a cavity, it frequently assumes a polypoid or grape-like configuration and then is referred to as the botryoid type of rhabdomyosarcoma or, more commonly, sarcoma botryoides. This is usually associated with the ear, the bladder and the vagina but has also been reported to have occurred in such unusual sites as the orbit, gallblader and common bile ducts. The presenting finding of the sarcoma botryoides depends on the site of involvement, e.g., strabismus, aural or vaginal discharge, hematuria or dysuria, or dysphagia. However, if all the cases of sarcoma botryoides were enumerated separately perhaps the most common site would be the torso.

Rhabdomyosarcoma is usually a highly malignant tumor which spreads locally and tends to metastasize predominantly via the bloodstream, but sometimes also by the lymphatic route. Most frequent sites of metastases are lungs, bone marrow, and lymph

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nodes, with viscera and brain less often involved.[2]

Therapy

In the past, the medical attitude toward soft tissue sarcomas has been one of resignation and discouragement. Almost all felt that if the tumor could not be resected all was hopeless, and even then the tumor often was expected to recur and be the cause of the patient's death in short order. With present day utilization of radiotherapy and chemotherapy such a hopeless outlook is not necessarily justified and should be replaced by early planning of a vigorous program combing surgery, radiation and chemotherapy, in a proper order for the individual patient.

Aggressive surgery is indicated in the treatment of these patients. Wide local excision where feasible, may cure some of them. However, Bowden recommends removal of the entire contents of the involved fascial space, including the muscle insertions down to the bony cortex,[4] rather than limited local block excision. Early limb amputation may be curative and is indicated in absence of evidence of metastases. Radical surgery may occasionally achieve a cure of tumors involving the prostate, bladder or vagina. Resection of the solitary metastasis to lung or liver may occasionally produce a cure. There has even been at least one case reported of a patient who had resection of bilateral pulmonary metastases and remained tumor-free during a 15-year follow-up.[5]

Radiation is a valuable adjunct to surgery. Some of the long-term survivors have been treated with irradiation. Five thousand to 7,000 roentgens is the maximum dose of radiotherapy that can be administered to these tumors without excessive damage to the adjacent tissues. The use of a tourniquet to induce local tissue hypoxia has allowed delivery of a dose of 14,000 roentgens before producing severe damage to the adjacent normal tissues with good responses in two of the three reported cases.[6] Perhaps greater use of this technique would further increase the usefulness of radiation in the treatment of these tumors.

Several chemotherapeutic agents have been used with fair to good results. A survey of case reports collected from the literature revealed that 71 of 135 cases of rhabdomyosarcoma had shown improvement when treated with various agents.[7] The majority of the responses noted were due to dactinomycin, vincristine, or cyclophosphamide. Since dactinomycin is a radio-sensitizing agent,[8] we now recommend its use concommitantly with cobalt irradiation, when feasible, for inoperable or inadequately excised tumors. If circumstances preclude surgery and irradiation, and only single drug therapy is feasible, cyclophosphamide would be the agent of choice since it has been shown to be effective and can be administered orally.[7] As more experience has been gained with chemotherapy, vincristine and cyclophosphamide have been found to be an effective combination which may even be used in association with radiotherapy without undue toxicity if carefully monitored.

At the present time the Southwest Cancer Chemotherapy Study Group is investigating the triple combination of vincristine, cyclophosphamide, and dactinomycin in patients with disseminated rhabdomyosarcoma. Thus far some good responses have been achieved, but the durations of follow-up have not been adequate to allow any conclusions. However, one can state that no longer should this tumor be viewed with complete pessimism, but should be treated early and aggressively with surgery to the primary tumor, or even selected metastases, and with judicious, but aggressive chemotherapy and radiotherapy to disease which is not completely resectable.

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Comment

Dr. Donaldson has effectively reviewed a subject that is often confusing in the medical literature due to differences in terminology used by various authors. In addition he has properly stressed the inclusion of sarcoma botryoides as an embryonal rhabdomyosarcoma. In our own review of soft part sarcomas in children (reference #2) we actually found embryonal rhabdomyosarcoma to be the most common malignant tumor of the soft parts in children. It was of interest also that the initial histologic diagnosis on many of these tumors was not embryonal rhabdomyosarcoma in view of the reluctance of many pathologists to make this diagnosis.

The clinical presentation and course of this tumor is quite different from the various forms of rhabdomyosarcoma seen in the adult patient. In our population of children with embryonal rhabdomyosarcoma seen at the Memorial Hospital we found that roughly half of the lesions had their origin in the head and neck region while the other half occurred in other sites. Of the tumors of non-head and neck origin, approximately one third occurred in the extremities, one third in the retroperitoneal areas, and another third in the groin and perineum. This localization is in marked contrast to the usual anatomical distribution of adult rhabdomyosarcoma, a lesion occurring primarily on the extremities. Additional confusion in regard to nomenclature does occur by virtue of the fact that an occasional adult patient is seen with this very aggressive form of embryonal rhabdomyosarcoma, and all six adults in our series died of their disease.

The therapeutic success that has been achieved with this tumor by surgery is quite modest. The lesions occurring on the extremities have been successfully treated by surgery in a number of patients, but the other sites of origin have had generally poor cure rates by this method. It is encouraging in recent years to see the benefits that have resulted from aggressive radiotherapy in some patients, either alone or in combination with surgery. However, the use of hypoxia as an adjunct to therapeutic radiation (as described by Dr. Donaldson) is clearly *experimental*, and unfortunately this approach is not applicable to most of the lesions for which we must rely on radiotherapy. In the extremities, where such an approach might be feasible, radical surgery is probably the most suitable approach.

Probably the most significant advance in the treatment of these lesions in recent years has been the development of several of the newer chemotherapeutic agents, particularly actinomycin D. Even children with metastatic disease have responded well to chemotherapy and have had long term control of their disease in many instances. The efforts of pediatric oncologists, like Dr. Donaldson, have clearly improved the overall results of treatment of this aggressive tumor by the use of these agents alone or in combination with other therapy. Recent results have tended to dispel some of the pessimism that has been associated with the diagnosis of embryonal rhabdomyosarcoma in the past.

The Editors

Mental Health . . . .

JOHN B. DYNES, M.D.

Improved Patient Care

In 1962, the Veterans Administration Cooperative Studies in Psychiatry instituted a study in 16 VA Hospitals (known as Project Number Nine). In brief, Project Number Nine in a double blind study, attempted to show the response of "hospitalized chronic schizophrenic men, who had been on maintained dosage of Chlorpromazine (Thorazine) or Thioridazine (Mellaril), were continued on that dosage or assigned to a placebo, or a reduced intermittent treatment group, for a 16 weeks study." [1]

The published results of this study indicate that 5% of the continued treatment group, 15% of the reduced treatment group and 45% of the placebo group of patients had relapsed. Although indirectly inferred, in this study the author believes that the most significant part of this investigation was that 55% of the placebo group did not relapse for a period of four months or more. This means in the thousands of chronic schizophrenic patients in this country who were given their daily dose of drugs, the majority may not need these tranquilizers.

Numerous papers have been published[2,3,4,5,6,7,8,9,10] concerning the advisability of "drug holidays". Despite the consensus of opinion expressed in these reports, the majority of chronic schizophrenic patients can be without the tranquilizing drugs for two or more months, the "word" has not as yet reached many of the physicians and nursing staff who care for patients, nor has this knowledge been applied in many hospitals. It has been a common belief among psychiatrists that schizophrenic patients fluctuate widely in their psychotic symptoms. The majority will have periods of quiescence, or on rare occasions complete remission, for many months or even years. With the coming of the drug era in the treatment of psychotic patients, it has been common practice to give patients their daily dose of tranquilizers as a preventive of psychotic relapse. The figures given in Project Number Nine would seem to indicate that a majority of chronic schizophrenic men did not need these tranquilizing drugs for a period of at least four months or longer.

It must be admitted that there is as much difference in the treatment of patients on various wards within a large mental hospital as there are nurses and physicians who care for patients. Some physicians are heavy-handed in the use of drugs, while others use drugs sparingly. Some nurses show more tolerance for the withdrawn, emotionally deteriorated and disturbed behavior of patients than others. Prien, Cole and Belkin[7] in a recent review, maintain that in seven different hospitals where withdrawal of drugs was conducted, there were "high relapse hospitals and low relapse hospitals". The same can be said of different wards within a large hospital with different personnel caring for patients. There is also a different appraisal of the patient and, at times, a wide difference in the estimate of what constitutes a relapse.

The present study was begun in 1969, seven years following Project Number Nine, and is a re-evaluation of those patients who remain in this hospital (VA Hospital, Salem, Virginia). In the original study in 1962 there were twenty-four chronic schizophrenic men included in that study. In the present study there are twelve of these patients remaining in the hospital and twelve

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Approved for publication by the Commissioner, Department of Mental Hygiene and Hospitals.

who have been discharged. Of these patients who have been discharged, one had died (cause of death unknown) the remaining eleven who have been discharged from this hospital have been transferred to nursing homes, (one patient); to their own homes and families (one patient); or to other hospitals (nine patients). All of these living patients have again been placed on tranquilizers.

Only one of the twelve remaining in this hospital was not included in the study. This patient's physician felt that he was maintained on such a precarious balance with the phenothiazines, that a withdrawal of these tranquilizing drugs would precipitate an immediate relapse. This patient had relapsed in 1962 when he was in the previous study. All of those patients who remain in the hospital had had their schizophrenic psychosis from thirteen to thirty-two years. They had taken Thorazine, Mellaril or Stelazine for a period of ten to twelve years and all of these patients had had the tranquilizing drugs continued after the 1962 study, up to the start of the present investigation, with the exception of a single patient with convulsive disorder and serious head injury (that had intervened since 1962). The remaining ten patients had full hospital and ground privileges and none of the ten were confined to their wards. The dosage of drugs had varied over the years from 200 to 600 mgs of Thorazine daily, 200 to 400 mgs of Mellaril daily and four to 10 mgs of Stelazine daily. Seven of these ten patients had a minor to severe induced Parkinson-like disorder and one of the ten had the most severe oral dyskinesia the author has ever seen.

In this group of ten patients, the phenothiazines were discontinued and a placebo was substituted for a three month period. Drug withdrawal symptoms (sweating, trembling, tachycardia, restlessness, and agitation lasting three days) were to be reported by the nurses who were following these patients and were also to be noted by the investigator.

Only one patient had symptoms of drug withdrawal and he was the one with the severe oral dyskinesia and Parkinson-like syndrome. The remainder of the group showed no signs of drug withdrawal.

A simple method of recording the patient's general and mental status was used. The nurses in charge of these patients had known them for many years and were familiar with their behavior and psychotic symptoms. Each nurse was asked to record daily her evaluation of the patient under three headings: (1) the same (as before the withdrawal of phenothiazines); (2) better and (3) worse. The investigator also made his own clinical evaluation of the patient's status in the same manner. Although these may be rather crude estimates, they may carry more meaning and reveal as much or more of the patient's status than the more complicated and time consuming tests that are frequenlty used. One of the faults that was evident with this manner of recording patient's status was that it was only a clinical estimate of the patient's present status. No definite estimate of how much better or how much worse (that is, improvement or relapse) was made, although it is generally assumed that the patient's behavior reflects the severity of his psychosis, even though it does not reveal the ideational content of his disorder. The frame of reference is the hospital milieu, to which these patients had been subjected for many years.

In the final recordings there were only two patients out of ten who showed signs of regression and relapse, occurring within two weeks after the withdrawal of the phenothiazines. These same two patients had relapsed in the 1962 study. However, their relapse on this occasion consisted primarily in mild withdrawal, episodes of irritability and verbal abuse, but did not reach the point where the patient lost his privileges or needed to be confined. These two patients had been given 30 mg of Phenobarbital t.i.d. but

did not need to be given phenothiazines during the three months period of the study. None of the remaining eight patients relapsed over a twelve-week period of the study. The drug induced Parkinson-like symptoms tended to diasappear, except in the patient with severe oral dyskinesia and although his oral symptoms improved, they did not disappear. In fact his oral dyskinesia tended to reappear with considerable severity about four months after the phenothiazines had been withdrawn. This particular patient's psychosis did not change during the three months of the study.

It was of interest to note that the eight patients who did not relapse on placebo, after three months in this study, had not relapsed in the 1962 study. Six of these men in 1962 had been on Thorazine and Mellaril either daily or three days a week and the remaining two had been on placebo. This might indicate that the six patients on tranquilizers would not have relapsed in 1962 if they had been given a placebo instead of the tranquilizing medication. One might speculate that of the other 15 hospitals involved in Project Number Nine, they too might have found that of their patients who had in 1962 received regular doses of tranquilizers, at least some of them would not have relapsed if they had been given a placebo. This may account for the opinion of others[6] that 70% or more of these patients may be placed on placebo, without a relapse for two months or longer.

In Project Number Nine, it was concluded that there was no definite indicator that would point to the patient who would relapse in a two months period or less, if the phenothiazines were withdrawn. In the present small series of patients, it seems evident that if a patient had relapsed before, he will likely relapse again, and furthermore the catatonic schizophrenic who is deteriorated emotionally and withdrawn, is more likely to relapse to some degree than the other types of schizophrenia although there are probably many exceptions. Prien[7] and associates contend that those on high dosage of tranquilizers before they were withdrawn are more likely to relapse. This would appear to indicate that those who had a more severe psychosis and therefore needed more medication to control symptoms were more likely to relapse than the less severe disorders.

It has been demonstrated that there is no difficulty in again giving medication to control the relapse symptoms and no harm is done by withdrawing drugs for a period and furthermore it makes for better care of the patient and better medical practice. It must be remembered that all of these patients were in the hospital under close observation and, therefore, it was possible to detect and treat symptoms as they developed. Outpatient clinics have reported that it is feasible to discontinue the use of the tranquilizers in many patients but a closer follow-up of these patients is necessary in order to prevent a relapse or re-entry to the hospital.

The author is in agreement with the giving of preventive and maintenance doses of medication for patients who need these drugs, but it does appear to be very poor practice of medicine to give drugs that are not needed and tend to produce drowsiness, basal ganglia disorders, as well as other toxic symptoms, and also undesirable and unnecessary drug expenditures. Even though this information has been available for the past ten years, it is evident that it has not as yet reached or been acted upon by many of the staff and ward personnel who care for chronic hospitalized mental patients. It may be easier and less fuss to chemically restrain the patient whether he needs restraint or not.

It might be suggested that the administration of mental hospitals might sponsor an educational program for staff and ward personnel that will help to avoid the needless, wasteful and at times ill advised giving of drugs. The educational program and the persuasion of staff and ward personnel are usually accepted better than an order to re-

(*Continued on page* 141)

Diagnostic Laboratory Medicine....

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Etiology and Laboratory Diagnosis of Infectious Mononucleosis: I. Epstein-Barr Virus (EBV) Mononucleosis.

The major obstacles to a clear understanding of the total clinical spectrum and the epidemiologic behavior of infectious mononucleosis (IM) have been the lack of both a proved etiologic agent and a specific serologic test. The development of high titers of heterophile antibodies (sheep cell agglutinins) during the active illness was first reported by Paul and Bunnell in 1932. Although still considered to be a nonspecific response, it has remained as the basis for the serologic diagnosis of IM for 37 years. The transient nature of the heterophile antibodies and their apparent absence in many cases otherwise resembling IM has seriously limited their usefulness in epidemiologic studies.

Evidence has been recently presented which indicates that the mononucleosis-like syndrome may be etiologically related to two common viruses of the Herpes group: the Epstein-Barr virus (EBV) and the cytomegalovirus (CMV). It is interesting, and undoubtedly meaningful, that these two viruses have remarkably similar characteristics: they are cell-associated herpesviruses of identical ultrastructure, share antigens, are associated with "mononucleosis" syndromes characterized hematologically by the transformation of circulating lymphocytes, may be found in cell lines derived from lymphocytes of normal persons and patients with various viral and lymphoproliferative diseases as well as from those subjected to intensive immuno-suppression, and both have been associated with post-transfusion mononucleosis and the post-perfusion syndrome.

Investigations by Henle and coworkers strongly indicate that EBV, or a closely related one, is the etiologic agent of IM. Their evidence is as follows: a) the virus propagates thus far only in cells of the lymphoreticular system; b) the virus appears to stimulate growth of lymphocytes in culture, and leukocytes of IM patients readily grow and develop into blastoid cell lines all of which were found to harbor EBV; c) all patients with classical IM, including positive heterophile tests, have shown high antibody titers to EBV; d) in prospective studies of IM the disease occurred only in individuals who previously had no antibodies to EBV; e) a history of classical IM could be elicited only among individuals who possessed antibodies to EBV; these antibodies in contrast to heterophile antibodies, seem to persist for longer periods of time, if not for life. This corresponds to the life-long immunity generally observed following recovery from IM; f) according to Grace, inoculation of EBV into an antibody-negative leukemic patient induced signs of IM with positive heterophile test and antibodies to EBV after an incubation period of 7 weeks. It should be mentioned that the etiological association of EBV with the pathogenesis of malignancies, such as Burkitt's lymphoma and cancers of the postnasal space, has not been either confirmed or disproved. The fact that EBV is widely disseminated and causes a common illness does not exclude the possibility of it being involved in the etiology of malignancies, either *per se* or in conjunction with other factors.

Several known oncogenic animal viruses are widely disseminated among their respective hosts, yet may induce tumors only rarely under natural conditions. Since EBV depends for its replication on cells of the lymphoreticular system it should, if oncogenic, be the cause of lymphomas. The general capacity of the virus to induce persistent low-grade infections in cell cultures and apparently also in man suggests a potentially oncogenic virus which by definition cannot be entirely cytocidal. There is ample and growing evidence linking EBV with Burkitt's lymphoma and possibly also cancers of the postnasal space.

The delayed acquisition of antibodies to EBV under high socio-economic conditions satisfactorily explains why IM is mostly a disease of college students and young professional groups. Primary infections in childhood may remain silent or unrecognized because they take a mild course, often unaccompanied by a heterophile test, even in otherwise typical cases. In East Africa, the antibiody studies indicate that primary EBV infections occur almost exclusively early in life; at one year of age 45 per cent and from 3 years on 85-95 per cent of the children possess specific antibodies. Thus, few young adults are susceptible and IM is virtually unknown among students at Makerere or Nairobi Universities.

Relationship of EBV to the post-perfusion syndrome was demonstrated by Gerber and coworkers on the basis of their data from serological tests for herpes simplex, cytomegalo, and EB viruses in patients before and after open heart operations with cardiopulmonary bypass.

In contrast to the cytomegaloviruses, EBV has not yet been reported to be responsible for many opportunistic viral infections affecting individuals with debilitating diseases such as leukemias, chronic infections, severe malnutrition, and patients receiving renal homotransplants, especially those treated with immunosuppressive drugs and ionizing radiation. Pertinent clinical and laboratory studies in this area would be rewarding.

The conventional diagnostic test for IM is the heterophile agglutination test using guinea pig kidney extract to absorb Forssman antibodies but not the IM heterophile antibodies; and, beef red cells to absorb the heterophile antibodies but not the Forssman antibodies. The new two-minute slide tests are replacing the standard heterophile antibody test in many physicians' offices.

Evaluation of the indirect fluorescent antibody test for EBV is in progress at the Medical College of Virginia. It may be useful, at least, in cases where 1) confirmation of a positive heterophile test is necessary, 2) a false negative heterophile test is being considered, or 3) the specific etiological agent of the IM syndrome needs to be established.

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Public Health . . . .

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Fighting Rubella in Virginia

Rubella is a common and relatively unimportant disease of childhood; however, when adult women get the disease, it can cause serious after effects. Rubella virus can cause babies to be born with abnormalities or the pregnancy can end in stillbirth or miscarriage. Some of the common defects of rubella-affected babies are cataracts, heart defects, deafness and mental retardation. The greatest danger lies in a woman's getting rubella during the first few months of her pregnancy.

The disease has been known since the mid 1750's and probably got its popular name, German measles, following large outbreaks of the disease in Germany in the early 1800's. Rubella was not linked to birth defects until 1941, when an Australian ophthalmologist, Dr. Norman Gregg, traced a large number of cataracts in babies to rubella stricken mothers.

Little was known about the virus until 1962 when two groups of United States scientists isolated it in their laboratories. Workers in this country and abroad then began immediately to attempt to attenuate the virus into a suitable form for vaccine.

One of the first rubella vaccines was developed by Parkman and Meyer of the National Institutes of Health. This vaccine, after being thoroughly tested, was first administered to children more than three years ago. No illnesses were induced and protective antibodies were stimulated in more than 95 percent of those vaccinated. Protection against the natural disease has been shown to persist three years.

Women may suffer reactions to the virus such as soreness and stiffness of the joints. Also, it is not know to what extent the fetus of a pregnant woman might be infected with the vaccine virus and whether or not fetal damage would result.

Thus, the best method of protecting the mother and the unborn child is to reduce the likelihood of the mother becoming infected through exposure to children who are the principal reservoirs of the disease.

At the beginning of a rubella-control program, children in kindergarten and in the early grades of elementary school deserve priority, because this group is commonly the major source of spread of the virus in the community.

The initial state-wide effort to eliminate rubella in Virginia began early in November 1969. Within a three week period 26,000 doses of vaccine were shipped to localities in Northern Virginia to immunize children in kindergarten through the third grade, thereby supplementing a comprehensive rubella immunization program just completed in the District of Columbia.

The U. S. Department of Health, Education, and Welfare notified the Virginia State Department of Health in the summer of 1969 to expect a rubella outbreak in 1970 or 1971 in line with its six to nine year epidemic pattern. It also informed the Department that Virginia's Federal Immunization Grant would purchase 70,000 doses of the vaccine.

In October a State Allocation Committee was formed to review requests for rubella programs and to make policy guidelines for the disbursement of the vaccine. At that time only 16,000 doses were available in Virginia and the committee was confronted with the problem of placing this small amount of vaccine where it would produce optimum results. Scattering it across the State in small quantities at each local health



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department was obviously not the answer. In November, 10,000 additional doses were obtained and the Allocation Committee agreed to release the total 26,000 doses to the Northern Virginia localities which had presented an epidemiologically sound program.

In addition to their proposed program these localities agreed to supplement the grant vaccine with a purchase of their own, and to administer the grant vaccine without charge.

In the future, the State must rely upon additional federal monies for the procurement of rubella vaccine, as State funds for this purpose are non-existent.

A related problem that confronts the immunization program is public apathy brought on through misunderstanding and lack of information. A large educational effort will be needed to inform the public of the difference between *rubella* and *rubeolla* and the significance of preventing the spread of "German measles". To initiate such a program a committee has been formed composed of representatives of The Medical Society of Virginia, the National Foundation—March of Dimes, the Bureaus of Health Education and Epidemiology and the Immunization Project of the Virginia State Department of Health.

The Committee's function is to determine the best approach to informing the public of the hazards of rubella and formulating a program of education to meet this need.

Hopefully, within the very near future (three years perhaps) the rubella problem will no longer be of the magnitude it is now.

In the meantime, physicians are urged to advise parents of the susceptible group to have their children immunized in order to prevent spread of the disease, and most importantly, to prevent a reservoir of contact for pregnant women.

MENTAL HEALTH—*Improved Patient Care—Dynes*

(*Continued from page* 137)

duce or eliminate the daily dose of tranquilizers in a selected group of patients. If this education and persuasion effort should not bring results then a drug reporting system might be devised and supervised by the administration to point out wards or physicians who continued high dosage of tranquilizers. These physicians could then be approached individually in order to prevent the needless giving of drugs and the various complications of treatment with these tranquilizing drugs. This should help to raise the level of patient care of medical and psychiatric practice in private, state and federal institutions.

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Woman's Auxiliary....

Accent on Youth with a Focus on Family Solidarity

Has been selected as the auxiliary key note this year. Nothing could please Virginia members more. Information is sifting through that county auxiliaries are putting themselves fully into their projects with enthusiasm. Mrs. M. Pinson Neal of Richmond, children and youth chairman, urges county auxiliaries to plan meetings around this theme. This may involve the clergy, educators, local family service agencies and so on. Such a meeting should pinpoint your communities' individual needs and lay straight a path of action.

Substantial progress in the campaign waged against provocative violence on television and in movies is in evidence, but nevertheless requires a continuing watchful eye. The workbook prepared by the children and youth committee is full of excellent and useful materials. If you have not already received the workbook, please contact Mrs. M. Pinson Neal, 2822 Weyburn Road, Richmond 23225. The auxiliary film on LSD may be procured through Gail Neal upon request. County presidents and presidents-elect should take particular note of these materials and plan to include a program of this nature in their calendar next year.

Recognizing drug abuse as a major problem with our youth the Fairfax County Medical Society in conjunction with the Alexandria and Arlington County Medical Societies sponsored a symposium January 7 on drug abuse to present the problem as it exists, methods of treatment and types seen in suburban practice. The auxiliaries, clergy, educators, nurses, pharmacists, and physicians were invited to participate, and it is hoped this will encourage them to become more active in this community problem.

The Southern Medical Association.

Are you aware that you may become a member of the Woman's Auxiliary to the Southern Medical Association through your husband's membership dues of only fifteen dollars a year? If your husband is not a member may we urge you to consider the overall benefits of the Association? The exclusive purpose of this unique organization is to develop and foster scientific medicine.

The Auxiliary has only two major projects: Doctors' Day, March 30, and Research and Romance of Medicine. Every two years a councilor from Virginia is appointed to the Southern Auxiliary. The main job is to encourage membership and supply each component auxiliary with the necesary information to carry on the two main projects. Each November your councilor takes to the annual meeting exhibits and books compiled by the Virginia auxiliaries which qualify for the competition leading to the many awards given for our efforts throughout the year.

It would be difficult for anyone who has attended an annual meeting of Southern to tell you of the outstanding work accomplished particularly in the Research and Romance of Medicine but also of the fellowship and lasting friendships that are made. The next meeting will be in Dallas, Texas. For further information write: Mrs. Martha D. Hooks, Executive Assistant, 2601 Highland Avenue, Birmingham, Alabama 35205.

The Auxiliary officers for 1969-70 are: President, Mrs. Gordon W. Peck, Baton Rouge; president-elect, Mrs. Ramsey H. Moore, Dallas; vice-presidents, Mrs. Abbott Y. Wilcox, St. Petersburg; Mrs. D. L. Clippinger, Hazelhurst, Miss., and Mrs. Martin Strobel, Reisterstown, Md.; recording secretary, Mrs. W. Nash Thompson, Stuart; treasurer, Mrs. Raymond E. Jones, Louisville.

Editorial . . . .

Some Reflections on the Education of the Doctor of Medicine

SINCE THE PRACTICING PHYSICIAN is part humanist and part scientist-technician, his education must be considered accordingly.

I would not be so rash as to program a course of humanities for him, but, whatever the course, he must have a consummate knowledge of his mother tongue, a passing acquaintance with one or two others, a grounding in numbers, a knowledge of the bio-physical principles of the world about him, and of some of the more famous and infamous things that Man in all his wondrous stupidity and brilliance has said and done.

Traditionally, the first twelve years of the educational continuum, grade school and high school, have been devoted to the accomplishment of this task, with substantial supplement in the college years. This job could better be done, and with no help from the college, by: 1. eliminating those prolonged and wasteful summer vacations, a hang-over from our non-airconditioned agrarian society; 2. eliminating those superficial vocational programs, like printing and "shop"; 3. pedagogical reform to avoid those wasteful yearly repetitions of grammar, arithmetic and the rest, enough to discourage even the most doughty (incidentally, I made an arithmetic text to carry my children to algebra, consisting of 17 typed pages) ; 4. permitting a child to enter school whenever he is ready.

Such a program would permit a reduction of at least two years in the conventional time of finishing grade and high school. Even if the student were to end his education at the finish of this properly bolstered program, he would pass as substantially educated.

Just as in some European systems, I would fuse the college and the medical school years, the primary responsibility for such training to reside in the medical school authorities. These would have responsibility for determining the premedical and the preclinical curriculum, which would have a distinct professional slant. Comparative anatomy and paleontology are very interesting, but the time necessary for these in a *professional* (as opposed to a cultural) curriculum is just not worth it, in view of what awaits our student down the road. A few courses would be available for further pursuit of humanities that particularly interest our student. Such a fusion of college and medical school could lop off another year or two. Several American medical schools, happily, are already trying

this experiment of assuming the responsibility for the student directly from high school. I envision the time when this course will be universal.

Now for the medical school itself: While adequate mental agility to handle a rigorous professional discipline is taken for granted, using results of tests as presently constituted (which measure largely recall rather than higher cognitive abilities of judgment) as the principal criterion for admission could exclude those who might later make fine doctors. We all know those whose knowledge exceeds their wisdom. We all know some colleagues not of encyclopedic bent, but who practice excellent medicine with an almost intuitive sense of what to do and what not to do.

Since medical school is primarily a place for developing doctors of medicine, these latter should occupy all of the places on admission committees. Professors of biochemistry should determine who will be admitted into graduate programs of biochemistry, but not of medicine.

The present state of foment of the medical curriculum is good if we don't damn everything that is old and praise everything that is new. Three present trends do concern me:

1. The influence of the general educationist, who has been taught to teach others how to teach. I have watched his influence infiltrate general education, with its pupil-centering, its interest-experience-centering, with its philosophy that the teacher is "a listener, helper, questioner, resource person, problem solver, arbiter", rather than an informed, educated master. I have watched the introduction of his frothy, meandering, many-hued text-books. I have watched him invade nursing education and now even medical education. Our vigilance must be constant and zealous against intrusion of any of his debilitating influences, nor must he be allowed on any committee that formulates curriculum. A little office assigned to the first year medical student has a faint aroma of Johnny learning his arithmetic by watching the checker in the supermarket ("interest-experience-centering"). Whenever you hear the words "problem-solving" or "learning situation", beware,—the educationist has been at work.

2. The elective system. Medicinal education cannot be a smorgasbord, where the student helps himself to whatever he likes or what he is interested in. Some plans for curriculum change have gone so far towards personal choice that general surgery has been suggested an elective. Despite the showing of some preliminary testing that such elective systems work satisfactorily, common sense would indicate that the master who has been "through the mill" is in a better position to know what should constitute a core curriculum.

3. Development of the abbreviated core curriculum. It has been estimated that a "minimum body of facts common to all physicians successful in their own specialties could be acquired in six weeks". Strauss[1] estimates that the core of knowledge of basic sciences known in common by all medical school professors could be learned in 12 to 18 weeks. However, just as one could make known his basic wants with some seven hundred English words, these would be totally inadequate to deal with the infinite subtilities around him. Just as a basic vocabulary must be differentiated from a reading vocabulary, so a basic medical knowledge must be differentiated from a much broader pool of learning whose details might dim with age but can be refurbished at once to permit building of new concepts upon the old, or changing the old.

Talk of abbreviating medical training is dangerous. Some of the time saved in the educational continuum as described above could be put to fattening the medical training, to reduce the dichotomy between the medical and the surgical practitioners, to reduce significant differences in clinical management according to whether the patient lands in the hands of a surgeon or of an internist, as in the case of a gastro-intestinal bleeder or of a gallstone bearer. The training period in some specialties must be lengthened or the specialty divided further into other specialties. The required time for training in radiology, for example, is totally inadequate to prepare for practice in all its branches.

In summary, the realization of the universal man passed with Renaissance Italy. Man's allotted time is really little; any lengthening of the time required for the preparation for a medical career is unthinkable. Time could be saved by upgrading and combining the grade school and the high school, and by assigning the premedical years to the medical educators with reduction of some of the cultural offerings which could never be consumed and continued in depth. Admission to, and the offerings of, the medical program must remain under the control of doctors of medicine. Criteria for admission must be further evolved. Some of the time saved would allow our doctor of medicine to start his life's work earlier; some could be put into amplifying his professional training by increasing, rather than decreasing, certain core material.

Christian V. Cimmino, M.D.

1. Strauss, M. B.: Doctor or Dropout? N.E.J. Med. 280:1417, June 19, 1969.

Rounding Out the Trilogy

THIS ISSUE of the Virginia Medical Monthly is devoted largely to articles prepared by members of the staff of the Medical College of Virginia—the Health Sciences Division of Virginia Commonwealth University (hereinafter referred to as MCV, for purposes of brevity). This material was compiled by Dr. Charles M. Caravati, Emeritus Professor of Medicine in that institution. The journal is indebted to him for the task of gathering original articles from a busy group of professional men is never an easy one. This is especially true at MCV for it has an excellent publication of its own which naturally has first priority on material originating there.

One contributor to this issue does not live in the Richmond area. Dr. Christian V. Cimmino practices in Fredericksburg, but commutes to Richmond, where he serves as Clinical Professor of Roentgenology at MCV. As he is a member of the Editorial Board of the Virginia Medical Monthly it is most appropriate to use one of his editorials to round out this issue. His topic deals with education—a subject always close to his thoughts and pen. Dr. Cimmino hastens to add that the ideas expressed by him are his, and his alone, and do not necessarily reflect the policy of any institution—past, present or future, for that matter. After a brief Sabbatical leave he is again on the Editorial Board and we are delighted to have him back in time to play an important part in this MCV number.

This is the fourth educational issue of this type that has appeared within the past two years. Two originated in Norfolk and were prepared by Dr. Charles E. Horton. The wealth of material there highlights the fact that Norfolk, by all odds, is the most logical location for the establishment of the next medical school on the eastern seaboard. May it soon become a reality.

Last January the journal published an excellent group of articles dealing with the "Problems and Progress in New Drugs, 1968". This was compiled by Dr. John A. Owens, Jr., and represented a part of the Continuing Education Program at the University of Virginia which deals each year with one or more worthwhile medical topics. Thanks to MCV, this issue of the Virginia Medical Monthly completes the original trilogy first suggested by Dr. Horton and envisioned by the Editorial Board three years ago. This has proved most successful and we trust this sequence of programs will continue as a regular feature in the journal.

H.J.W.

News . . . .

Calendar of Events

Alton D. Brashear Postgraduate Course in "Head and Neck Anatomy"—Medical College of Virginia—Richmond—February 17-20, 1970.

Stoneburner Lecture Series—Medical College of Virginia—Richmond—February 19-20, 1970.

Student Cancer Day—University of Virginia School of Medicine—Charlottesville—March 6, 1970.

Annual Postgraduate Program—Sponsored by Medical Staff of Roanoke Memorial Hospital—Roanoke—March 19-20, 1970.

Spring Series of Thursday Afternoon Lectures—University of Virginia School of Medicine—Charlottesville—March 5-April 23, 1970.

Cardiac Symposium—Sponsored by Heart Association of Northern Virginia and Washington Heart Association—Marriott Twin Bridges Motor Hotel—Arlington—April 8, 1970.

Swineford Allergy Conference—University of Virginia—Charlottesville—April 10, 1970.

Annual Postgraduate Course—Sponsored by Staff of Gill Memorial Eye, Ear, Nose and Throat Hospital and Clinic—Hotel Roanoke—Roanoke—April 12-15, 1970.

Norfolk General Hospital—Continuing Education Symposium—Recent Advances in Cancer, Infectious Diseases and Endocrinology—Norfolk—April 30 and May 1, 1970.

Virginia Society of Ophthalmology and Otolaryngology—Annual Meeting—Williamsburg Lodge—Williamsburg—May 6-9, 1970.

Virginia Academy of General Practice—Annual Scientific Assembly—Hotel Roanoke—Roanoke—May 6-10, 1970.

International Cancer Conference—Sponsored by International Union Against Cancer—Houston, Texas—May 22-29, 1970.

Child Psychiatry Spring Forum—Medical College of Virginia—Richmond—May 29, 1970.

Seaboard Medical Association—Nags Heads, North Carolina—June 18-21, 1970.

American Medical Association—Annual Convention—Chicago—June 21-25, 1970.

* * * * * *

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicans. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following members were received into The Medical Society of Virginia during the month of December:

Robert Rives Bailey, M.D., Yorktown
Abraham Davis Bernanke, M.D., Alexandria
James Rodney Brayshaw, M.D., Alexandria
Hawes Campbell, III, M.D., Yorktown
Clifford William Caplen, M.D., Alexandria
Chai Chang Choi, M.D., Alexandria
Eugene Joseph Conley, M.D., Alexandria
Michael Fulk Durfee, M.D., South Boston
William N. Elam, M.D., Alexandria
Frederick Carlyle Evans, Jr., M.D., South Boston
Richard Lee Fields, M.D., Fairfax
Irwin Stanley Freedman, M.D., Alexandria
Zeymour Zonald Goldblatt, M.D., Alexandria
Paul Goodwin, M.D., Arlington
Robert Kay Heidi, M.D., Norfolk
Karl H. R. Hellinger, M.D., Fairfax
H. Bland Hudgins, M.D., Mathews
George Allen Jansen, M.D., Charlottesville
Raymond Kenneth Joyner, M.D., Yorktown
Stephen Charles Kauffman, M.D.,
George Herman Kessler, Jr., M.D., Winchester
Ralph Navero Lee, M.D., Hampton
Augusto Julio Martinez, M.D., Richmond
Dean Francis May, M.D., Alexandria
Charles Robert Meloni, M.D., Alexandria
Harold Rolf Noer, M.D., Arlington
Themis Vincent Pangalos, M.D., Norfolk
Isabel T. Pereira, M.D., Alexandria
Harry Gordon Plunkett, Jr., M.D., Virginia Beach
John S. Pulizzi, M.D., Alexandria
Ruth Gentry Reckrey, M.D., Richmond
George Walter Reese, Jr., M.D., Richmond
Richard Herick Ryan, M.D., Alexandria
Larry Odell Sharpe, M.D., Norfolk
Jonathan Titus, M.D., Alexandria
Henry Joseph Tucker, Jr., South Boston
Gary Wentworth Wake, M.D., Winchester
J. Frederick Walk, M.D., Winchester
Benneville Dayton Wilmot, M.D., Alexandria
Robert Kenneth Wineland, M.D., Alexandria
Joan Wohlgemuth, M.D., Alexandria

Dr. Robert O. Hudgins,

Richmond, has been elected president of the Virginia Association of Professions.

Dr. Emory F. Hodges,

Alexandria, has been appointed by President Nixon as one of a 14 member Task Force on Prisoner Rehabilitation. The group will review problems faced by ex-offenders in order to determine how to help them better achieve a lastingly productive and rewarding return to society.

Hospital Staff,

Dr. Milton Greenberg, Danville, has been elected president of the Memorial Hospital staff. Dr. Delos W. Boyer is vice-president and Dr. Charles C. Freed, Jr., secretary.

Southern Medical Association.

Dr. John Paul Jones, Richmond, has been named chairman of the Section on Pediatrics of the Southern Medical Association.

Dr. John T. Farrar, Richmond, has been



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named chairman of the Section on Gastroenterology.

Dr. Edward P. Cawley,

Charlottesville, has been elected president of the American Academy of Dermatology.

Stoneburner Lecture Series.

The twenty-third annual Stoneburner Lecture Series on Hematology will be held February 19 and 20 in the Baruch Auditorium at the Medical College of Virginia.

The guest lecturers will be Dr. M. Robert Cooper, Bowman-Gray School of Medicine, Winston-Salem, North Carolina; Dr. James Harriman Jandl, Harvard University and Thorndike Memorial Laboratory, Boston; Dr. Daniel N. Mohler, University of Virginia, Charlottesville; Dr. Wendell Rosse, Duke University, Durham; and Dr. Robert I. Weed, University of Rochester.

Continuing Education Symposium.

The Norfolk General Hospital, Norfolk, will hold its fourth annual Continuing Education Symposium on April 30 and May 1. The subject will be Recent Advances in Cancer, Infectious Diseases and Endocrinology.

Certified Medical Representatives Institute.

The first class of this Institute graduated in October. Four companies represented in this class are A. H. Robins, Syntex Laboratories, Warner-Chilcott Laboratories and Dorsey Laboratories. They have completed a two and a half year program to become better qualified to served the professional men in medicine, pharmacy and dentistry. Two-thirds of those who started the course did not graduate. Ciba Pharmaceuticals will have representation in April of 1970.

The Institute was chartered in 1966 to establish a broad graduate-level educational program directly related to the career functions of representatives of manufacturers of ethical drugs. The Institute is located in Roanoke.

Physicians Wanted.

Full time emergency room coverage in active emergency room of 191-bed, accredited hospital, in the beautiful Shenandoah Valley of Virginia. Guaranteed annual salary $25,000 plus incentive. Contact Administrator, King's Daughters' Hospital, Staunton, Virginia 24401. (*Adv.*)

Wanted.

One or two general practitioners, service obligation fulfilled, to join established GP group. Local hospital. Population 20,000. Twenty-three miles from Richmond, Virginia. Drs. Moore and Miller, 815 West Poythress Street, Hopewell, Virginia 23860. Telephone: 458-8557. (*Adv.*)

Wanted.

Emergency room physician, Virginia license necessary. Minimum annual guarantee. Contact James A. Miller, M.D,. Winchester Memorial Hospital, South Stewart Street, Winchester, Virginia 22601. Phone (703) 662-4121 (*Adv.*)

Obituary....

Dr. John Morehead Emmett,

A past president of The Medical Society of Virginia, died December 27 following a heart attack at his office in Clifton Forge. He was seventy-six years of age and was a graduate of the Medical College of Virginia in 1915. Dr. Emmett became chief surgeon for the C & O Railway in 1939, after working in railroad hospitals in Huntington, West Virginia, and Clifton Forge. He was also chief surgeon of the C & O Railway Employees Hospital Association. Dr. Emmett served as a surgeon in the U. S. Navy during World War I. He was a member of the University of Virginia Board of Visitors and was a former president of the Virginia Chapter of the American College of Surgeons.

Dr. Emmett has been a very active member of The Medical Society of Virginia since 1915. He served as president in 1942-3.

A son and four daughters survive him.

Dr. Marshall Levis Boyle,

Richmond, died December 5, at the age of eighty-one. He was a graduate of the former University College of Medicine in 1913 and had practiced in Richmond for more than fifty years. Dr. Boyle was a Mason and a member of Alpha Kappa medical fraternity and the Caduceus Club.

Dr. Boyle had been a member of The Medical Society of Virginia for fifty-five years.

A daughter survives him.

Dr. Samuel Clinton Draper,

Tallahassee, Florida, died December 13th at the age of eighty-nine. Dr. Draper practiced in Wytheville before retiring to Florida in 1961. He had been a member of The Medical Society of Virginia since 1917.

His wife and a son survive him.

Dr. Guy Ross Harrison,

Richmond dentist, died December 22nd. He was an associate member of The Medical Society of Virginia, having been elected to membership in 1922. Dr. Harrison was oral surgeon at St. Luke's and Stuart Circle Hospitals. His wife and a daughter survive him.

Dr. Louis Aloysius Houff,

Clifton Forge, died December 10 at the age of sixty-six. He was a graduate in medicine from Georgetown University in 1929. Dr. Houff served as medical examiner for Clifton Forge and eastern Alleghany County. He was a member of The Medical Society of Virginia, having joined in 1930.

His wife and two sons survive him.

Dr. William Haney Matthews,

St. Paul, died December 4. He was fifty-nine years of age and a graduate of the Medical College of Virginia in 1935. Dr. Matthews had been a member of The Medical Society of Virginia for twenty-two years.

His wife, a daughter, a son and two stepsons survive him.



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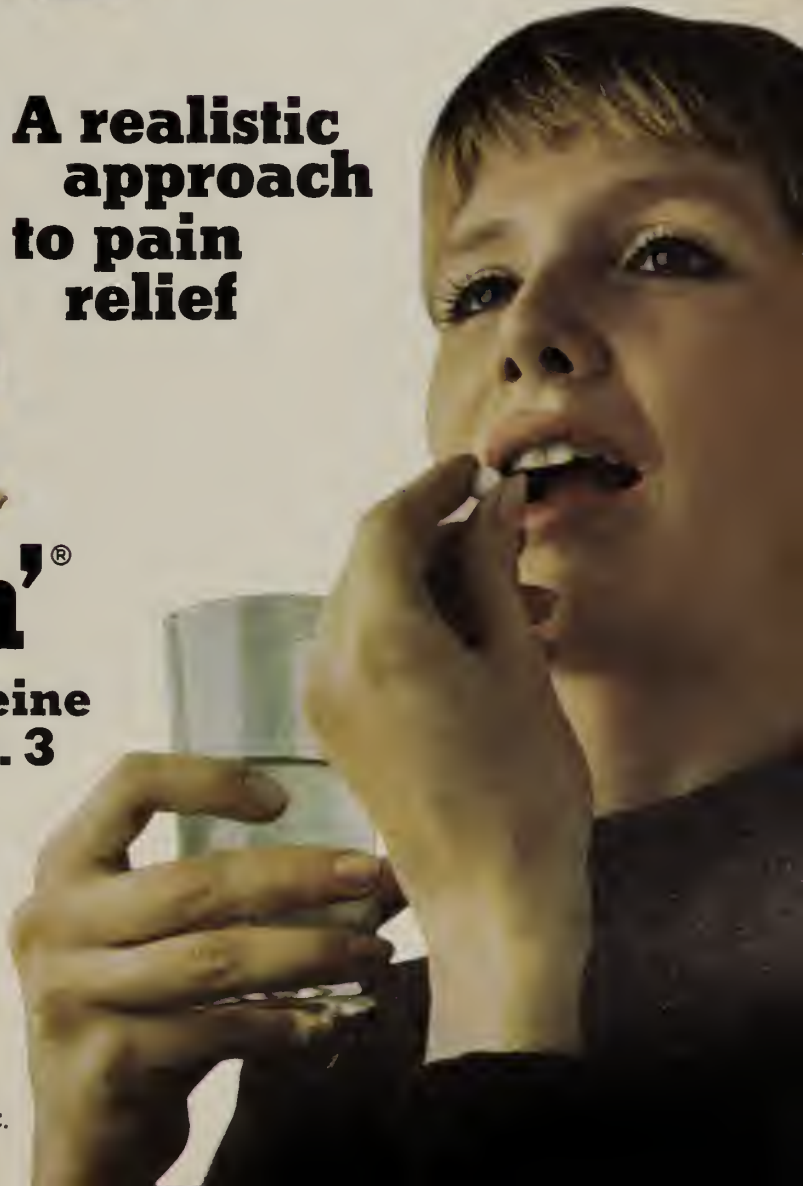


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Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. Patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention), skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

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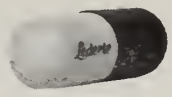
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VIRGINIA MEDICAL MONTHLY

THE FRANCIS A. COUNTWAY
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BOSTON

3 APR 1970

MARCH 1970

OFFICIAL PUBLICATION OF THE
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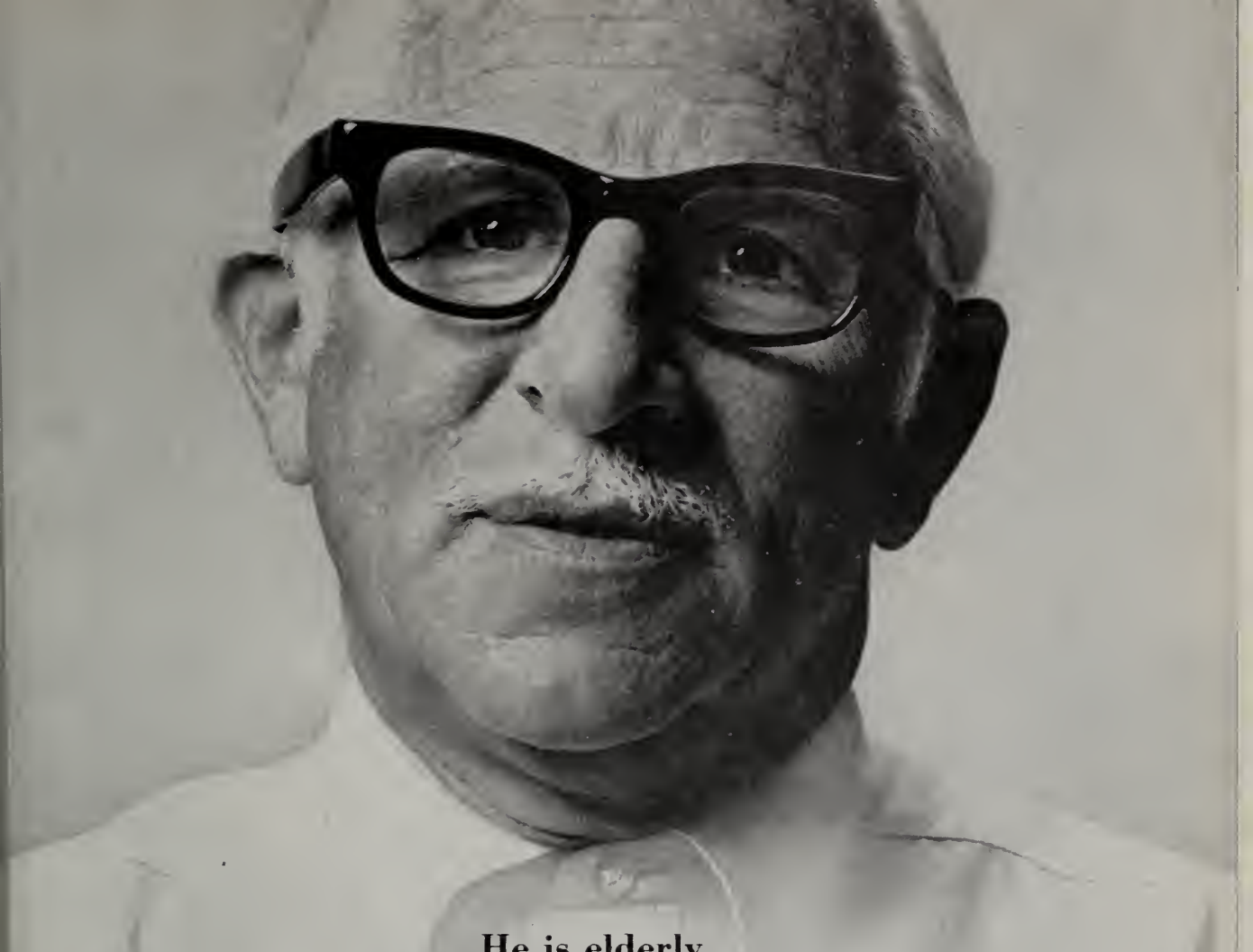
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Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

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Contraindications: Children 14 years of age and under; pregnant women and nursing mothers; active gastrointestinal lesions or history of recurrent gastrointestinal lesions; allergy to aspirin and indomethacin.

Warnings: *Gastrointestinal Effects:* Because of the occurrence and, at times, severity of gastrointestinal reactions, be continuously alert for any sign or symptom signaling a possible gastrointestinal reaction. The risks of continuing therapy with INDOCIN in the face of such symptoms must be weighed against the possible benefits to the individual patient. Gastrointestinal effects may be reduced by giving the drug immediately after meals, with food, or with antacids. Use greater care in aging patients.
Ocular Effects: Corneal deposits and retinal disturbances, including those of the macula, have been observed in some patients on prolonged therapy. Discontinue therapy if such changes are observed. Ophthalmologic examination at periodic intervals is desirable in patients on prolonged therapy.
Central Nervous System Effects: INDOCIN (Indomethacin, MSD) may aggravate psychiatric disturbances, epilepsy, and parkinsonism, and should be used with considerable caution in patients with these conditions. If severe CNS reactions develop, discontinue the drug.

Precautions: Blurred vision may be a significant symptom that warrants a thorough ophthalmologic examination. Patients should be cautioned about engaging in activities requiring mental alertness and motor coordination, as driving a car. Headache which persists despite dosage reduction requires complete cessation of the drug. May mask the usual signs and symptoms of infection; therefore, the physician must be continually on the alert for this and should use the drug with extra care in the presence of existing controlled infection. After the acute phase of the disease is under control, an attempt to reduce the daily dose should be made repeatedly until the patient is off entirely.

Adverse Reactions: *Gastrointestinal Reactions:* Single or multiple ulcerations of the esophagus, stomach, duodenum, or small intestine, including perforation and hemorrhage, with fatalities in some instances; gastrointestinal bleeding without obvious ulcer formation; perforation of preexisting sigmoid lesions (diverticulum, carcinoma, etc.); rarely, increased abdominal pain in ulcerative colitis patients or development of ulcerative colitis and regional ileitis; gastritis, which may persist after the cessation of the drug; nausea, vomiting, anorexia, epigastric distress, abdominal pain, and diarrhea.
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Hepatic Reactions: Rarely, toxic hepatitis and jaundice, including some fatal cases.
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Central Nervous System Reactions: Psychotic episodes, depersonalization, depression, coma, convulsions, peripheral neuropathy, drowsiness, mental confusion, lightheadedness, dizziness, headache.
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Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity reactions*—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage. Upon adverse reaction, stop medication and treat appropriately.

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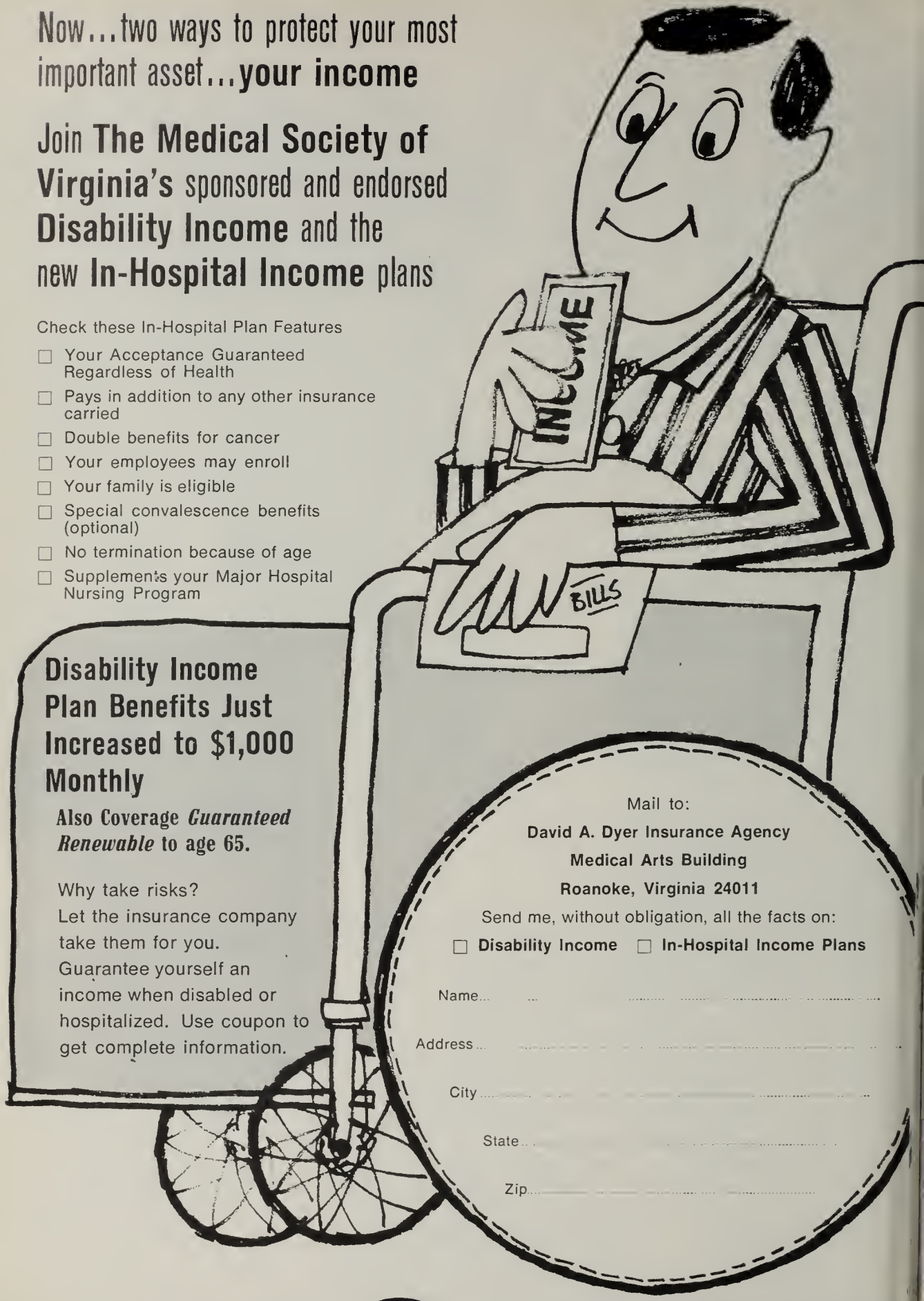
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The Virginia
MEDICAL MONTHLY

March, 1970

Vol. 97, No. 3
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Guest Editorial . . . .

Pimples

"He that can resist pinching a pimple is master of the whole self."—Fred Allen

COMPLEXION PROBLEMS are among the chief concerns of many teenagers. Several surveys to determine the incidence of medical problems among adolescents have listed acne vulgaris as the most frequent health complaint. Although one survey lists acne vulgaris second to emotional problems, this is understandable since the two are intimately related. Loss of self esteem associated with a poor complexion is such that it makes little difference whether acne or emotional problems lead the list.

Adolescents compose a large segment of patient population. Physicians should heed their need. They need and deserve decent care for their skin problems. Far too often these young people are dismissed with a "don't worry, it will clear up when you are a little older." A little older indeed! Many patients have active acne vulgaris for ten to twenty years. Neglect of this problem leads only to physical and psychic scarring. An unfortunate victim once said, "it doesn't end life; it only ruins it!"

If nothing could be done for pimples then the physician *might* be justified in dismissing the problem as just another adolescent condition and an "it will go away". The fact is that a lot can be done and if a lot is done the unfortunate patient can be restored to both physical and emotional health.

The sympathetic physician who offers understanding and encouragement along with good topical therapy can often achieve an extra measure of success. A few minutes spent explaining the pathogenesis of acne and the rationale of treatment will encourage both the patient and the parent.

It's a pity that acne appears in that period of life when people are most conscious of physical appearance. Adolescence is difficult enough

without acne. The self consciousness produced by this disease causes many young people to withdraw or manifest strange behavior during what should be the happiest and most joyful period of their lives. Simple instruction in the proper use of astringent cleansers and lotions and the judicious use of antibiotics in prolonged but low doses can control well over 50% of patients with acne vulgaris. Physicians who are willing to learn the simple principles of management of acne will be rewarded by the gradual emergence of a pimple-free patient with an entirely new and happy outlook on life.

Many thrilling events that occur in the life of a physician—the birth of a new baby—the restoration of a decent life in a diabetic with insulin —the extension of life in a cardiac with digitalis. One of these thrills should be the restoration of a happy personality in a teenager with acne.

E. Randolph Trice, M.D.

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The Contribution of Renal Nerves and Renin to the Renal Responses to Intravascular Volume Expansion

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The response to intravascular volume expansion was studied in dogs as well as the role played by renal nerves and renin. The possibility of correlation between the response in salt and DOCA loaded dogs and hypertensive patients was suggested.

THE MAINTENANCE OF BLOOD VOLUME is dependent to a large extent on the renal control of salt and water homeostasis. It is now recognized that in the intravascular space there are various receptors which contribute to this control. These "volume receptors", located in the left atrium, aortic arch, carotid sinus, and probably many other sites[5] have been credited with "sensing the fullness" [11] of the intravascular compartment and in some manner signal the kidney to retain or excrete water and electrolyte.

Figure 1 demonstrates some of the renal

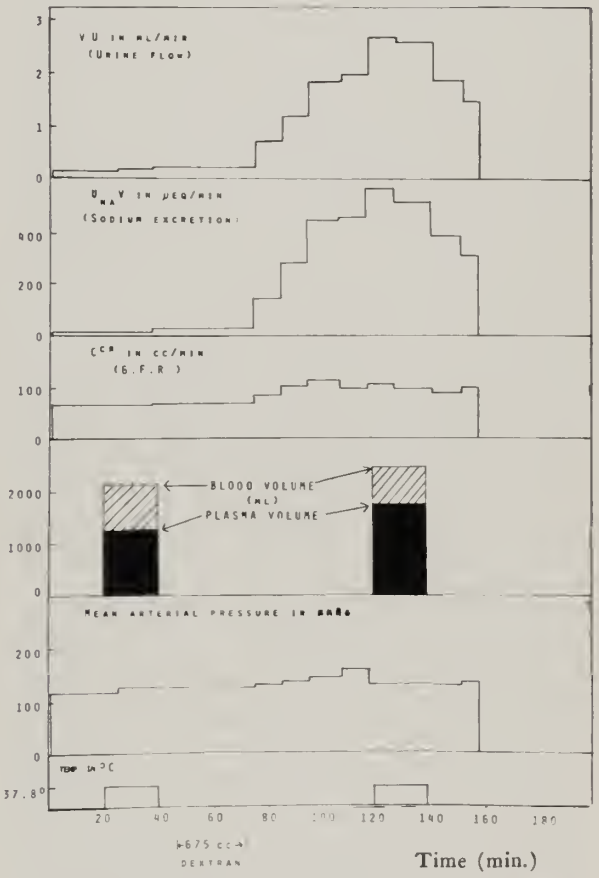


Fig. 1. The responses of intravascular volume expansion in a normal unanesthetized dog.

effects of blood volume expansion in an unanesthetized dog. Expansion of the blood volume with an isotonic, iso-oncotic solution (6% clinical dextran) results in a highly significant diuresis and natriuresis with only a modest increase in glomerular filtration rate and little change in blood

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pressure or heart rate. It is now generally accepted that this diuresis is due in part to a humoral response which results from inhibition of the anti-diuretic hormone.[5] The natriuresis is more complex. There is currently a great deal of speculation that this too is the result of a humoral response initiated by an unknown substance which has been designated as the "natriuretic hormone" or "the third factor".[4] The purpose of this report is to study the role of renal nerves and renal renin in modulating these responses to blood volume expansion.

Renal denervation in the anesthetized dog has been reported to affect salt and water excretion,[2,3,13,14] However, it is now generally accepted that innervation of the kidney is not necessary to maintain normal renal function in the unanesthetized state.[2,15] Although the diuresis and natriuresis which results from intravascular volume expansion appears to be, in part, a result of humoral effector mechanisms,[22] the role of renal nerves in this response is not clearly defined.[1,9,10] In the present study the renal effects of acute, isotonic, iso-oncotic, intravascular volume expansion was studied in unanesthetized American Foxhounds, prior and subsequent to chronic, bilateral, renal denervation. The results indicate that renal nerves have little, if any, importance in modulating the natriuresis and diuresis following volume expansion. These studies presumably will correlate with clinical situations in which renal nerves are not intact, including of course, renal transplantation.

The role of renin in modulating the renal responses to volume expansion is not well understood. In light of the accelerated natriuresis seen in hypertensive patients following volume expansion,[21] it would be feasible to implicate renin in this mechanism. Similarly, renal denervation has been reported to deplete renal renin levels,[12,17,20] and it has been suggested that attenuation of natriuresis following various interventions may be related to renin depletion.[8] Our studies demonstrate that renin is not essential to the diuresis and natriuresis resulting from volume expansion and that long term steroid administration and salt loading potentiate these responses.

Methods

Four registered American Foxhound bitches weighing between 17-22Kg and ranging between 11-17 months which had reached sexual maturity but had not been bred were used in this study. Eighteen hours before the experiment the dogs were transferred to an indoor environment, prehydrated with 500 cc of normal saline intravenously, and fasted from food and water.

At the time of the experiment the bladder was catheterized transurethrally and intravenous polyethylene cannulae were introduced percutaneously. In some experiments a small transverse incision was made under local anesthesia (1% lidocaine) and direct cannulization of a peripheral limb artery was performed for blood pressure monitoring. The dog was then restrained in a large comfortable canvas sling. Exogenous creatinine clearance was employed as an index of glomerular filtration rate. Approximately 45 minutes after the creatinine infusion was started the bladder was emptied. This was confirmed with a distilled water flush followed by an air flush. Urine was then similarly collected every 10-15 minutes until two consecutive periods showed an approximately equal urine flow. Blood samples were obtained between urine collections. Blood volume was then expanded with 6% clinical dextran in normal saline (Cutter®) warmed to body temperature in an amount equal to 3% body weight, at a rate of 30 cc per minute. Urine collection was continued every 8-12 minutes until urine flow reached a new steady state and then declined to a value equal to approximately 1/2 the maximal diuresis value. Blood was sampled between peak urine flow collections. At the end of the experiment the bladder was flushed with a topical antibiotic solution and all catheters removed.

Plasma and blood volume determinations were carried out using Evans Blue dye during the control period and at peak diuresis. Blood pressure was monitored using a multichannel recorder. Urine and plasma were analyzed for creatinine with an autoanalyzer, sodium by flame photometry, and osmolality by freezing point depression.

The effect of intravascular volume expansion was studied twice in each animal before renal denervation. Following the control experiments the dogs were subjected to bilateral renal denervation under sterile operating room conditions with a general pentobarbital anesthesia in the following manner: renal artery and vein were isolated and all renal nerves were transected. All adventitia was removed from the renal vasculature and the vessels were coated with 80% alcohol solution. Each kidney was then freed of all peritoneal and retroperitoneal attachments. Finally the ureters were dissected free of their peritoneal attachment and stripped of their adventitia at the renal pelvis.

Between 9-20 days following renal denervation the effects of intravascular volume expansion were then again determined on two different occasions in each dog.

These same dogs were then pharmacologically depleted of renin as follows: each dog received 25 mgs of DOCA/day intramuscularly and 6 gms of sodium chloride by mouth twice each day. After at least 10 days, and no longer than 24 days on this regimen, the dogs were again prehydrated, fasted overnight, and the renal effects of volume expansion were again determined exactly as described above. Each dog was studied once and three dogs twice. Unfortunately, one dog died before she could be studied a second time. Necropsy revealed a liver abscess which was probably exacerbated by the steroid administration.

A Burroughs 5500 Computer employing the "student t" test for paired data was used to test the statistical significance of the results between the control and renal denervated series. Because of the uneven number of dogs the "student t" test for unpaired data was employed in testing for statistical significance between the renal denervated and the renin depleted series. $p < .05$ was taken as significant.

Results

Renal denervation produced a small rise in control urine flow and glomerular filtration rate. However, there was no significant difference between the intact and renal denervated animals as regards magnitude of diuresis, natriuresis, or osmolar clearance following volume expansion. The usual changes in glomerular filtration rate following intravascular volume expansion were not affected by renal denervation. The denervated animals demonstrated no significant change in plasma or blood volume, nor was there any significant alteration in the extent to which plasma volume was increased following dextran infusion. Arterial pressure was not affected by renal denervation in either the control state or following volume expansion. It is of interest that the denervated dogs reached a maximum diuresis and natriuresis more rapidly than they did before renal denervation.

When compared with renal denervation, renin depletion did not significantly alter the control urine flow, sodium excretion, glomerular filtration rate, or osmolar clearance. There was a significant potentiation of both diuresis and natriuresis in the renin depleted dog following volume expansion which was not accompanied by a comparable increase in GFR at peak urine flow. Osmolar clearance at peak diuresis was increased in the renin depleted series and these animals demonstrated a further shortening in the time taken to reach peak diuresis and natriuresis.

DOCA and salt loaded dogs demonstrated a consistent increase in arterial pressure but did not gain weight or demonstrate an increase in plasma volume.

Discussion

The data presented demonstrate that the unanesthetized dog with chronic bilateral renal denervation responds to intravascular volume expansion with a diuresis and natriuresis which is not significantly different in magnitude from the normal dog. If a correlation truly exists between canine studies and the situation in humans it would appear that any discrepancy in salt and water homeostasis which may occur following renal homotransplantation is not due to an interruption of renal neural pathways.

It is quite likely that following renal denervation the dogs in our series were already depleted of renal renin stores.[10,17,20] However, in order to be certain of this they were placed on a pharmacologic regimen which has been demonstrated to degranulate secretory cells of the juxtaglomerular apparatus and to deplete renin levels.[6,19] Expansion of the intravascular volume in these animals demonstrated that they had an accelerated diuresis and natriuresis. This indicates that renin is not responsible for these responses.

We are uncertain whether or not there is any correlation between the potentiation in diuresis and natriuresis observed in DOCA and salt loaded dogs and that seen in hypertensive patients. It is known that in the hypertensive state there is an increase in arterial wall sodium[7,16] and that sodium content of the blood vessel wall has a direct correlation with vascular resistance.[18] It is tempting to postulate that these animals develop an increase in arterial wall sodium and the resultant increase in vascular tone affords an accelerated response to volume expansion by similarly increasing the sensitivity of the involved intravascular volume receptors.

Acknowledgements

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The Incidence of Gonorrhea in the Private and Clinic Patient

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The private obstetrical patient in this study has an incidence of gonorrhea of 0.5% and the gynecology non-white clinic patient has an incidence of 11.2%. The year 1968 showed a reported 14.8% increase of this infection. These figures indicate an alarming situation.

ANNUALLY there has been an alarming and continuous increase in the incidence of gonorrhea of almost epidemic proportions. The year 1968 showed a reported 14.8% increase, the greatest yearly increase yet recorded.[1] To illustrate the problem further we can cite the experience that year of a large prenatal clinic service in Virginia where seven cases of gonococcal ophthalmia were found in one month. Although this may have been due to errors in prophylaxis it emphasizes that gonorrhea is a current problem of some magnitude in the obstetrical patient.[2]

In the Norfolk City Venereal Disease Clinic newer diagnostic techniques utilizing the Thayer-Martin gonorrhea medium revealed a minimal diagnostic accuracy of 55% in asymptomatic female contacts of males with proven gonorrhea. This was twice the accuracy of the smear in the female.[3]

In view of the rising incidence and the improved means of diagnosis by culture, it seemed appropriate to plan a study comparing the incidence of gonorrhea in both clinic and private prenatal and gynecological patients in an urban area.

Materials and Methods

All pre-natal patients and new gynecological patients under forty were examined in the hospital clinic and the private office of two of our attending staff members. Excluded from the study were all cases of gonorrhea previously diagnosed and all patients recently given antibiotics. The cervix was exposed by a bivalve speculum lubricated with water. The cytologic smear was obtained, and the cervix was then wiped with a dry sponge and massaged 6-8 times with the blades of the speculum. A cotton swab was inserted into the cervical os and rolled directly on the culture plate. The Thayer-Martin gonorrhea medium was enriched with Iso Vitale X (B.B.L.), a chemically defined supplement known to aid the growth of gonococci. Vancomycin 3 units, colistimethate 7.5 gms. and nystatin 12.5 gms. were added to reduce contamination.[3]

The culture plates were placed immediately in a CO_2 jar, incubated at 35°C and examined at 16 hours and again at 40 hours. The cultures were treated with oxidase reagent and the colonies examined by fluo-

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rescent antibody (FA) testing. All patients with positive cultures were interviewed and treated either with penicillin, amphicillin or cephaloridine and follow-up studies were done by the Norfolk City Venereal Disease Clinic.

Results

One hundred and twenty-four patients with gonorrhea were detected in 2,392 patients examined, an incidence of 5.2%. Six of 989 private patients had positive cultures, an incidence of 0.6%. One hundred and

TABLE I

GONORRHEA

TOTAL INCIDENCE

	# *Patients*	+ *Culture*	%
Private	989	6	0 6
Clinic	1403	118	8 4
Total	2392	124	5 2

PRIVATE PATIENTS

	#	+ *Culture*	%
OB	203	1	0 5
GYN	786	5	0 6
Total	989	6	0 6

eighteen of the 1,403 clinic patients had positive cultures, an incidence of 8.4%. One of the 203 private prenatal patients had a positive culture, an incidence of 0.5% and five of the 786 private gynecological patients, an incidence of 0.6%.

In the pre-natal clinic the incidence was 5.2% and in the gynecological clinic it was 9.9%. Twenty-one of the 23 positive cultures in the pre-natal clinic occurred in 278 non-white patients giving an incidence of 7.5%. There were 95 positive cultures in the clinic gynecological patients, an incidence of 9.9%. Of this group 86% was non-white. Ninety-three of the 95 positive cultures occurred in the non-white group, an incidence of 11.2%. Eighty-four percent of the total positive cultures reported were in the 15-29 year age group.

Discussion

The overall incidence of gonorrhea in our study was 5.2% with the highest incidence of 11.2% in the non-white gynecological clinic patient. It is therefore important to screen all clinic gynecological patients in the 15-29 age group since one can expect an incidence of over 10%. This should more than justify the inconvenience of taking a routine gonorrhea culture. One

TABLE II

GONORRHEA

CLINIC PATIENTS

	OBSTETRICAL		
	#	+ *Culture*	%
White	165	2	1 2
Non-white	278	21	7.5
Total	443	23	5 2
	GYNECOLOGICAL		
	#	+ *Culture*	%
White	133	2	1 5
Non-white	827	93	11 2
Total	960	95	9 9

must realize that cultures will detect a minimum of the cases of gonorrhea and the true incidence is probably higher than that reported in this study.

Previous authors have reported in clinic pre-natal patients incidence of 5.5% in Richmond, Virginia,[4] and 5.73% in Cleveland, Ohio.[5] This latter group was 93% non-white. Our rate in the non-white prenatal clinic patient was higher 7.5% but still well below the 11.2% found in the gynecological clinic. The exact reason for this is not evident unless the non-pregnant group is more sexually active and promiscuous than the pregnant patient. However, the incidence in clinic pre-natal patients is also sufficiently high to warrant a routine gonorrhea culture. The low in-

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Febrile Reaction to Methlydopa with Hepatotoxicity

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A case of febrile reaction with derangement of liver function due to exposure to methyldopa is presented. The mechanism of the production of these reactions is considered.

METHYLDOPA is known to cause sporadic febrile reactions, presumably through an allergic mechanism. Liver function disturbances are reported irregularly with these febrile reactions. The present case demonstrated fever with initially normal liver function values, but developed striking abnormalities on continued exposure to the medication. This curious pattern stimulated a brief review of the literature regarding the induction of fever and liver disturbance by methyldopa.

Case Report

This sixty year old white male was first noted to be hypertensive at age fifty-four incidental to hospitalization for an auto accident. He had been treated with thiazide preparations exclusively except for a brief experience with added reserpine, which was discontinued because of depression. Diastolic readings were generally kept at 90 to 95, but when values of 100 to 105 persisted, methyldopa 250 mg. q.d. was added. This change was made on July 24, 1968. On August 11, the patient experienced a true shaking chill followed by a fever to 104 degrees. The following day the patient obtained oral penicillin therapy, but as the fever persisted with temperature rise daily to 104 degrees the patient was hospitalized on August 13.

At the time of admission the patient complained only of true shaking chill and fever with moderate generalized prostration. There were no localizing respiratory, gastrointestinal, or genitourinary symptoms. The only significant item of past medial history, aside from hypertension, was a history of moderately heavy drinking in the past with a BSP value of 11% obtained in May, 1967. The patient had sharply curtailed drinking since that time. Admission laboratory studies included a normal urinalysis and hematocrit, with a white count of 7,400, including 77% segmented forms, 12% bands, 7% lymphocytes, and 4% monocytes. Over the first twenty-four hours cultures of urine and sputum and six blood cultures were obtained. Of these, only the sputum later proved abnormal, this showing a few klebsiella-aerobacter organisms.

The patient was treated expectantly; the anti-hypertensive program of hydrochlorothiazide 50 mg. b.i.d. and methyldopa 250 mg. q.d. was continued. The patient again had a shaking chill on August 11 and a fever of 105 degrees in the afternoon. At the same time, a watery diarrhea stool was passed. This was cultured (subsequently reported normal flora) and the patient was started on ampicillin. On this day, also, SGOT was reported 12 mu. (normal 0 to 12) and alkaline phosphatase was 2.3 u. (normal 0.4 to 2.3). The patient continued to have daily fever spikes to 103 to 105 degrees with shaking chills over the next

six days. In this interval, repeat values for white counts were normal, though a slight shift to the left with 80% segmented neutrophiles persisted on differential. On August 20, liver function studies were repeated with strikingly abnormal values. Alkaline phosphatase was 13.3 u. and SGPT was 252 u. (normal less than 45 u.), with protein electrophoresis showing increased alpha globulins, but normal gamma and albumin fractions. At this point the possibility of drug reaction was appreciated and methyldopa was discontinued. The fever ceased within twenty-four hours and did not recur. Liver function tests on August 22 included bilirubin direct 0.28 and indirect 0.42. SGOT was 35 mu. and cephalin flocculation was 4+. By August 23, alkaline phosphatase had fallen to 8.3 and SGPT was down to 88. On August 26, alkaline phosphatase was 6.5, SGOT 26, and SGPT 59. The patient was discharged on August 31, and three weeks later values of 2.7 for alkaline phosphatase and 13.5 for SGOT were obtained on follow-up visit. He had since remained well with blood pressure readings of 150/90 on hydrochlorothiazide 50 mg. q.d. and chlordiazepoxide 25 mg. t.i.d. He did demonstrate a rather prolonged period of muscle aching and general malaise before he finally returned to work on October 21.

Discussion

This case has interest because of the clearly demonstrated association between the febrile reaction to methyldopa and the development of severe liver function abnormalities. Dollery[1] has nicely defined the pattern of febrile reaction to methyldopa. Sudden onset of high fever usually ten to twenty-one days after starting the drug characterized this reaction. Laboratory abnormalities follow no consistent pattern, though eosinophilia, elevated sedimentation rate, and liver function abnormalities are all reported. Fever ceases within twenty-four hours when the drug is withdrawn and rechallenge with the drug causes prompt return of fever, usually in twenty-four to forty-eight hours. This case fits the pattern with onset of fever on the eighteenth day of therapy and cessation of daily fever spikes within twenty-four hours of the last dose of methyldopa. Rechallenge was not done, because of the rather marked liver function disturbances and because the patient preferred not to re-experience those symptoms.

In the current case, however, initially normal liver function studies (done about sixty hours after the first fever) became markedly abnormal under the influence of continued therapy with methyldopa. This apparent delayed onset of liver disturbance prompted a close examination of the literature to see if this unusual timing could account for variations in the reported association of fever and liver disturbance from methyldopa.

The table presents a summary of the reported cases of fever from methyldopa with as much detail as could be found regarding the time of liver function tests in relation to the drug insult. In most instances where the cause of fever was promptly recognized and the drug discontinued there are no reports of significant liver function abnormality. Such is true in cases 1, 3, 7, 11, 13, 14, and 15. In contrast to this, is the situation in cases 4, 5, and 8, where the cause was not immediately recognized and substantial liver function abnormalities were demonstrated by tests done after the drug insult had continued three to ten days from the first fever. A parallel situation is seen in cases 2 and 16, where the fever subsided or did not recur on challenge, but liver function abnormalities persisted with continued drug administration. The remaining three cases are difficult to interpret, but in one instance (case 6) substantial liver function abnormalities presumably accompanied the fever at the outset.

It is tempting to speculate that liver function abnormalities would be a regular accompaniment of febrile reactions to methyldopa, if exposure to the drug con-

tinued long after fever develops. The course of the present case would seem to suggest this; and cases such as 2 and 8, where fever was transient but liver damage persisted, that author[10] reported the case with five others showing an unspecified degree of liver function disturbance and he noted four of these six presented with chills and fever.

TABLE

REPORTS OF FEVER DUE TO ALPHA-METHYL DOPA

CASE NO.	Time to Fever	SGOT N<40	SGOT N<45	BSP N<5%	Alk. Phos. N<4.5	Bilirubin D/T	COURSE OF ILLNESS
1. Leonard #1	13 d.	4		1%		0.4/0.7	drug stopped promptly; tests 5 months later
2. Leonard #2	19 d.	29		19%		0.4/0.8	transient fever, drug continued, tests 4 months later
		14		9%		0.0/0.4	2 months after drug stopped
3. Leonard #3	15 d.	22			2.0	0.4/0.7	drug stopped promptly; tests 3 weeks later
4. Colwill #1	12 d.	48			16.5		test done after 10 days of fever still on medication
					4.7		tests normal off drug 1 month
5. Colwill #2	9 d.	93			N		tests done after 3 days of fever with drug continued
		22					tests normal off drug 1 month
6. Colwill #3	4 wk	140		18%	7.2		time of test not stated; presumably at onset of fever
		20		2%	3.7		tests normal off drug 1 month
7. Colwill #4	2 wk.	N		N			time of test not stated; presumably at onset of fever
8. this report	18 d.	12			2.3		test done after 2 days fever
		35	252		13.3		test done after 9 days fever still on drug
		13.5			2.7		tests normal off drug 1 month
9. Sheps	3 wk	SGOT 188 at onset (N<40); drug stopped promptly but fever and slight SGOT elevation persisted 1 week					
10. Dollery #1	13 d.	BSP 40%, time of test not stated					
11. Dollery #2	12 d.	liver function tests presumably normal, not detailed					
12. Dollery #3	11 d.	liver function tests presumably normal, not detailed					
13. Montegriffo	10 d.	liver function tests normal at onset of fever					
14. Douglas	11 d.	liver function tests normal, presumably at onset of fever					
15. Gillespie #1	3 d.	liver function tests normal at onset of fever					
16. Gillespie #2	12 d.	"elevated" SGOT, Alk. Phos., and bilirubin at onset of fever; normal in 5 days; liver function tests again elevated on later challenge with drug but no fever then					

would tend to connect these two disturbances. A third evidence is the relative scarcity in the literature of reports of serious liver damage from this drug aside from those incidental to fever. Zarday[8] reports a particularly severe example of hepatocellular damage from this drug, apparently without significant fever. His references include another case[9] with severe liver function abnormalities, including an SGPT value of 320 (normal less than 45), which recurred on rechallenge with methyldopa, but fever is specifically denied. Also, referenced was a case with documented jaundice, but

This scarcity of reports of liver damage without fever contrasts with the apparent frequency of febrile reactions with or without liver disturbances. Dollery[1] estimated febrile reactions at 2% to 3%. Leonard[2] observed three febrile reactions in fifty cases treated; Douglas[6] found one in twelve; Sheps[4] one in thirty-three; Gillespie[7] two in eighty; Colwill[3] four in twenty-nine; and Horwitz[10] four in one-hundred-twenty-five. More than half of these showed associated liver function abnormalities.

As a final note in regard to liver function disturbances due to methyldopa it is impor-

tant to distinguish mild and transient elevations of transaminase from the reports noted above. Several authors have noted change in routinely done transaminase values, usually less than twice normal and subsiding in the face of continued drug exposure. Sheps[5] reported this in six of thirty-three cases; Irvin[11] in four of fifteen; and Smith et al.[12] reported a 24% incidence of this slight change and found it with equal frequency on regimens which did not include methyldopa. The important observation that these changes subside even in the face of continued exposure to methyldopa would separate them from the much less frequent, but more severe toxic reactions.

Summary

A clinically striking case of febrile reaction to methyldopa is reported. The development of liver function disturbances subsequent to fever lead to speculation that febrile and hepato-toxic reactions to this drug reflect the same mechanism.

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The Slow Learner in the Classroom with Emphasis on the Child with Minimum Brain Syndrome

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Diagnostic techniques are being developed that identify the child with minimum brain syndrome at the first grade level or earlier. Much psychopathology can be prevented by early treatment and a favorable prognosis given in most cases.

SCHOOL represents a period of self discovery, self realization, and a chance for the child to utilize his strength as he begins to determine the nature of his interests, and the quality of his responses. School is an instrument devised by our culture to give direction to part of the growth and to provide tools to aid the process of self realization. The spectre of the underachieving child in our community and in our culture is looming increasingly large, judging by the statistics of the child guidance clinics throughout the United States, private and public. Approximately two out of three children in the United States, who are referred to child guidance clinics, are children who have a variety of learning disabilities. We have become increasingly aware of the existence and the intensification of learning disability.

A review of the last 500 cases in a private child psychiatric clinic, of which the author is director, reveals the following incidence, percentagewise, of slow learners. Of the two out of three children who are referred for underachievement or slow learning in the classroom, approximately 60% are for psychological reasons. These represent power struggles with the parents; failures to assert or to be successfully aggressive; emotional disturbances that interfere with the cognitive functions of the individual; insufficient familial strength to make it possible for the child to interrupt his anxious pursuit of some stability so that he might attend to the formal learning tasks in school.

Mental subnormality accounts for approximately 15% of these children. The mental subnormality is divided into two categories, one that is functional as a result of social and cultural deprivation and understimulation and mental deficiency of a primary nature. These children very often are not recognized as being mentally subnormal until they attend school. The United States has increased concern with the underprivileged child, with the child from the poverty area, with the child who is locked in the sub-culture of failure. It is interesting to note that the approximately seven out of 10 of these children have their mental subnormality fairly well locked in place by the time they complete the first grade. The implication of this is that the teaching methods employed to reach these children do not take into account the cultural set in which these children are reared and live, and represents very often the attempt to apply middle class values to low social economic groups. The primary mental defective who has not developed sufficient brain mass; where there

are congenital anomalies and diffuse brain damage is included in the balance of this 15%.

Approximately 20% of the remaining represent the minimum brain syndrome. These are children whose symptomatology manifests itself in terms of mild motor incoordination, hypokinesis, hyperkinesis, disorders of impulse control, dyslexia, dyscalculia, dysgraphia, disorders of perception and concept formation and attention, mild aphasias, and mild neurosensory deficits and composits of these. This group is increasingly inviting attention to itself because it is a challenge to preventive measures where we can deal with these problems hopefully by better prenatal and postnatal management of these children.

In years gone by the minimum brain dysfunction in children often was mis-diagnosed as emotional problem, variance of early childhood psychosis, malingering children, poor teaching methods, mental deficiency and immaturity. In the average busy child guidance clinics, with the taking of a careful history, with the employment of a battery of psychological tests and psychiatric and neurological examinations and pediatric evaluations, we have come to piece together a picture of minimal brain dysfunction. The pathology in these children is the result of a variety of viral infections during the intra-uterine life of the child, misuse of drugs, prenatal hemorrhages, placental insufficiencies. Perinatally some of these children experience periods of anoxia, hemorrhage, too rapid delivery and prematurity. Postnatally we see a variety of encephalities, minor head injuries, concussions, ingestion of toxic chemicals, hypothyroidism, etc. A number of these children seem to result from the deprivation syndromes. The author has seen about 1/2 dozen of these children who were battered, who were neglected and who had stunted psychological growth development as a result of a negligence of their sick and often seriously mentally disturbed parents, avitaminosis, chronic infection and abuse.

EEG, awake and asleep, and neurological examinations are necessary to further elaborate structural and functional disturbances of the brain growing out of the above mentioned insults. In many instances we have a 14 and 6 positive spike wave epileptic diathesis, mid-brain dysrhythmia, temporal lobe epilepsy and some specific epileptoid seizure pattern on the EEG. The EEG itself is by no means the diagnostic tool. It is useful when positive, but by itself is approximately a 40% tool in our experience. But, coupled with the careful history, psychological evaluation, psychiatric evaluation, and pediatric evaluation, it rises to about a 90-95% useful tool. By far the most sensitive tool in testing the child is the battery of psychological tests. The ordinary battery must consist of at least one or two tests for intelligence, according to the age of the child. The Stanford-Binet Intelligence Scale is used before five year of age, Wechsler Intelligence Scale for Children from six to about 16, and Wechsler Adult Intelligence Scale for adolescence and beyond. These can be complemented by additional validating intelligence tests. It is important to test the visual-motor capacity of the child with tests such as the Bender Visual-Motor, the Draw-a-Person Test, the Porteus Maze and Trailmaker Tests. Achievement should also be evaluated by such tests as the Wide Range Achievement Test for Children, California Test, Mental Maturity and Slingerland Test. Projective tests are useful and necessary in order to measure the adequacy of the ego function, the thought life, the emotional attitudes, conscious and unconscious, of the child. These also evaluate the child's perception of himself, his body, his world, his relationship to significant people, how he handles his anxiety, his identity and his tensions. This also is extremely important in evaluating the presence of impotence, personality

and configuration of the minimally brain dysfunctioned individual.

A carefully detailed history as to the parental background, the history of congenital anomalies and/or family disease, the prenatal, perinatal and postnatal period is extremely important. The personality of the parents can emphasize, exaggerate or ameliorate the pathology in a child. It has been our experience that the parents of the child with minimum brain dysfunction are ordinarily healthier than the parents of the children who have primary emotional problems. However, we have not seen any children with minimum brain dysfunction who do not have some concurrent emotional problems because ordinarily neither the parents nor the school nor the community recognize that the child has a deficit over which he has no control. He simply reacts with a sense of loss of body integrity, a sense of difference, a sense very often of self disgust, anger, a sense of unworthiness and impotence and incapacity to cope. We have found the reaction of the parents to be very mixed. Some are pleased they are not to be in a major way incriminated in the pathology which they find in their children. Some, on the other hand, have a necessity to deny the possibility and must shop further for additional diagnostic impressions more to their liking.

These children and their families represent a minor problem in medical psychiatric management, but a serious problem for education. They seriously tax the educational facilities because they are not set up to tolerate the hyperactivity, the problems with impulse control, the motor-incoordination, the disturbances of perception and concept formation. Teachers ordinarily do not have the training to use the special multi-sensory learning reinforcement techniques needed to teach many of these children.

This author has employed very extensively the use of the dextro-amphetamines for these children, using dosages usually in a spansule form of 10 to 15 mgm, once in the morning coupled very often with a very mild tranquilizer, such as Diazapam, or Meprobamate occasionally also employing Sodium Dilantin 3/4 grain TID or QID up to, depending upon the age of the child, a grain and ½, once TID. The dextro-amphetamine seemed to serve the function of increasing the alerting centers in the brain, making it possible for these children to function in a more coordinated fashion. Many times small miracles are wrought with this very inexpensive medication. In addition to this to offset some of the side effects of the dextro-amphetamine and also to deal with the pushy-drivenness of these children the use of Diazapam, Meprobamate, etc., makes these children more manageable to the family and to themselves.

If there is not serious pathology within the family these children can very often be managed on an out-patient basis in the so-called 20 minute hour on a once-a-month basis. It is of paramount importance, however, that one have a conference with the school to help them understand the nature of the child's problem, to prescribe special training techniques, to most importantly interpret the meaning of the child's hyperkinesis and impulse problems, to point the way to the special teaching materials around the dyslexia the child may possess and to help them reprogram the child around their disorders of perception and concept formation. Very often adjunctive work with speech therapists and hearing therapists is important. The family needs reassurance in the long run that the largest majority of these children will one day turn out to be productive men and women, capable of marrying, capable of bearing children, capable of holding down a job. When no longer measured by the yardstick of formal education many of these children will look not at all extraordinary. It is of paramount importance that we educate and rear them so they do not perceive themselves as bad, damaged and inadequate human beings.

Many of these children will come to the clinics exceedingly overloaded by their own and the family problems. These children will, in addition, require intensive psychotherapy. In some way, the minimum brain dysfunction in children is recognized in slow learning groups in school. We are beginning to develop both diagnostic and treatment techniques whereby we can pick up these children early in their school careers, as early as the kindergarten or first grade level. We can treat them in the ordinary schoolroom if we have the cooperation of the family physician, the educator and the family. We can prevent a great deal of unnecessary psychopathology, if we can pick up this problem early. Many of the children will require special educative techniques, such as the multisensory reinforcement techniques, most often used with the dyslectic child. Some will need speech therapy, others will need a combination of these, medication and psychotherapy. The ultimate prognosis for the large majority of these children is favorable.

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THE CONTRIBUTION OF RENAL NERVES AND RENIN TO THE RENAL RESPONSES TO INTRAMUSCULAR VOLUME EXPANSION—
Michaelis-Gilmore

(*Continued from page* 156)

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Oral Malignancies in a Community Hospital Tumor Clinic

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The availability of the mouth to digital and visual examination permits the physician and dentist to make early diagnosis of pre-malignant and malignant lesions. With prompt and adequate treatment many cases may be cured.

THIS STUDY is a review of intra-oral malignancies managed and followed by the Alexandria Hospital McCluer Tumor Clinic from 1949-1969 (20 years) or followed by the Tumor Clinic through its registry.

The primary lesions were divided into their predominant anatomic location. Some lesions on the lateral border of the tongue extended to the floor of the mouth—just as retromolar mucosal lesions involved the alveolar process and may have extended to the anterior pillar. In listing the anatomic site there has been separation of lesions at the base of the tongue from those of the anterior two-thirds of the tongue. This is done because of the more precarious base of tongue neoplasm and its extremely poor prognosis, as compared to the anterior two-thirds of the tongue. Lip neoplasms are not included in this study.

The members of the tumor board evaluating oral lesions usually consist of a radiologist, general surgeon and oral surgeon. Head and neck surgeons, plastic surgeons, otolaryngologists, chemotherapists and prosthodontists were available for consultation and professional services. All of the above clinicians are extremely well qualified in their respective specialties.

A total of 48 patients were seen, 36 patients (75%) male, and 12 patients (25%) female. The average age of the male patient was 60 years and the female patient 57. The youngest patient was 33 years of age and the eldest 82.

The histologic diagnosis of the malignancies revealed a predominance of squamous cell carcinoma (92%). Table I.

TABLE I

48, No. of Patients with Intra-Oral Cancer

Histological Diagnosis	*Number of Patients*	*% of Total*
Squamous cell carcinoma	44	92%
Adenocarcinoma	3	6%
Mucoepidermoid carcinoma	1	2%

The most frequent anatomic site for the intra-oral malignancy was the anterior two-thirds of the tongue. The second most common location was the floor of the mouth. Table II.

For more detailed study the lesions were divided into four categories: (1) local involvement only, (2) regional involvement (metastases to submaxillary, submental or cervical lymph nodes), (3) remote metas-

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tases, and (4) undetermined systemic involvement. Table III.

TABLE II

Anatomic Site

Site	Number of Patients	Approx. %
Mucosa and tuberosity of maxilla	1	2%
Mucosa, alveolar process of mandible (retromolar region)	2	4%
Buccal mucosa	4	8%
Base of tongue	4	8%
Anterior two-thirds of tongue	16	33%
Palate	9	20%
Floor of mouth	11	23%
Labial gutter and mandible	1	2%

Note in Table III that 58% of the patients had localized disease without clinical or radiologic evidence of metastases. Of the

TABLE III

Neoplastic Involvement

	Number of Patients	%
Local Involvement	28	58%
Regional Involvement	16	34%
Remote Metastases	3	6%
Undetermined Involvement	1	2%

16 patients with regional metastases, 11 cases, or 69%, were carcinomas of the tongue. See Table IV.

TABLE IV

Regional Involvement from Oral Primary*

Site	Number of Patients	%
Base of tongue	4	25%
Anterior two-thirds of tongue	7	44%
Retromolar gingival and alveolar process	2	13%
Labial gutter and mandible	1	6%
Floor of mouth	1	6%
Plate	1	6%

*Three patients with regional involvement lost before or during treatment. (No follow-up possible)

Of the 28 patients with local disease only, over 50% of these were tongue and floor of mouth lesions. See Table V.

There were three cases of remote metastases and one patient with undetermined involvement.

The primary modalities used in treatment were radiotherapy and/or surgery. Chemotherapy was used in a few patients not amenable to either surgery or radiation therapy.

TABLE V

Localized Intra-oral Malignancy

Site	Number of Patients	%
Anterior two-thirds of tongue	8	28%
Buccal mucosa	4	14%
Palate	7	26%
Floor of mouth	8	28%
Mucosa and tuberosity of maxilla	1	4%

The surgery was either wide local resection or a composite resection. The composite resection refers to a radical neck dissection in combination with the primary intra-oral lesion. Radiation therapy in the past 10 years has been primarily cobalt 60.

The results and mode of therapy for the patients with localized disease were compared to patients with regional metastases. Tables VI and VII.

TABLE VI

Modality of Treatment of Patients with Regional Metastases

Modality	Number of Patients	Number of Patients 5 Year Survival	Average Survival Time
Composite resection	4	1	2 yrs.
Radiotherapy	7	0	7 mo.
Radiotherapy and surgery	2	0	1 yr., 2 mo.

Of the 16 patients with regional metastases, three were lost during or before treatment with no possible follow-up. Two patients are being followed now—one is six years post composite resection for carcinoma anterior two-thirds of tongue. The other patient is now 10 months post composite resection for a buccal mucosal malignancy. This second patient has also been treated with cobalt 60 for carcinoma of the tonsillar fossa, palate and alveolar ridge three months prior to the en-bloc resection.

On review of the modality of treatment and survival of patients with localized carcinoma of the oral cavity, it is noted 14 of the 28 patients, or 50% of these patients, are still alive. Of the 14 deceased, three patients died from vascular disease without evidence of neoplasm, while 11 patients (39%) died from the oral malignancy.

TABLE VII

MODALITY OF TREATMENT OF PATIENTS WITH LOCALIZED DISEASE

Modality	*Number of Patients*	*Patients With 5 yr. Survival*	*Average Survival Years*
Local resection	13	9 (32%)	6.5 yrs.
Composite resection	7	2 (7%)	3
Radiotherapy and surgery	4	0	1.5
Radiotherapy	4	0	1

A study of the 16 known living patients, their modality of treatment, five year survival and average survival rate are observed in Table VIII.

frequently functional, emotional and physical deformity result from adequate therapy. We must also be mindful of the fact that many lesions are radiosensitive, while others are more amenable to surgical resection.

It is felt along with other clinicians[2] that the anatomic site, extent of involvement, age and physical condition, microscopic pathology as well as any previous treatment, should determine the best modality of therapy for oral malignancies.

Whereas some clinicians[3] feel that essentially all primary carcinomas of the lip and mouth should be accompanied by neck dissections, other specialists[4,5] in this field propose that routine neck dissections be done on oral malignancies that occur in an area with a high percentage of nodal metastases (tongue and floor of mouth). There are some oncologists who decide strictly on the individual case. Griffin et al.[6] in a study of 61 cases of tongue carcinoma, varied the surgery from wide local excision to excision

TABLE VIII

MODALITY OF TREATMENT OF 16 SURVIVING PATIENTS

	Modality	*Number of Patients*	*Range of Survival*	*5 Years Survival*	*Average Survival Time*
a) Patients with local disease	Local Resection	10	1-14 yrs.	8 (50%)	8 yr.
	Composite Resection	3	3-7 yrs.	2 (12½%)	5 yr.
	Radiotherapy	1	3 mo.	..	3 mo.
b) Patients with Regional Metastases	Composite Resection	1	6 yrs.	1 (6%)	6 yr.
	Composite Resection and Radiotherapy	1	10 mo.		10 mo.

Discussion

Five percent of all malignancies occur in the oral cavity, claiming approximately 7,000 lives a year. It is estimated that about 14,000 people will be afflicted by oral cancer this year.

The author[1] is of the opinion that management of oral malignancies (other than lip) calls for the team approach. This is because oral neoplasia varies greatly in histology and degree of involvement, so that with radical neck dissections. The surgical decision in his study was made with respect to location, histology and absence or presence of metastatic lymph nodes. James[2] treats the smaller primaries by local surgery or radiation. Martin[7] does local resections on small or moderate size lesions of the lip, tip and lateral borders of the tongue, buccal mucosa, etc.

There is very little, if any controversy as to the need of a composite resection when

there is clinical suspicion or evidence of lymph node metastases. Deviation from neck dissection may be considered in the infirm or elderly in very poor general health as well as the patient with generalized neoplastic involvement (carcinomatosis). In these instances radiotherapy in combination with chemotherapy may prolong life with relative comfort for the patient.

Some studies[4,2,8] reveal the present five year cure rate of all intra-oral malignancies (excluding the lip) to be about 32.5%. The McCluer Tumor Clinic has an overall five year survival rate of 26%. (This excludes those patients lost in follow-up and who died of non-neoplastic disease.) Since our study began in 1949 there has been some progress in radiotherapy, such as Cobalt 60, as well as in chemotherapy, thus improving the longevity of almost all intra-oral carcinomas.

Recent studies[8] have shown that the five year cure rate of a lesion 2 cm and less is 57%. One might speculate the potential cure rate of localized lesions of 1 cm and less.

At the present time oral malignancies could conveniently be divided into two groups: (a) local disease and (b) systemic disease. The localized disease offers the best prognosis for a cure with minimal morbidity. Stringent criteria with respect to determining regional lymph node involvement are necessary to control this disease. Obviously the primary must be controlled first and foremost.

It is conceivable that some day oral cancer will be a curable disease since early diagnosis and prompt, adequate treatment are major factors in determining the prognosis of this disease. Prophylactic removal of pre-malignant lesions in the oral cavity with careful follow-up, may, to a great degree, prevent the disease.

The availability of the mouth to digital and visual examination permits the physician and dentist to make an early diagnosis and institute proper treatment. This, plus education of the public about oral cancer, are by far the most effective means of combating malignant disease of the mouth.

The author extends his sincere appreciation and acknowledgment to Alvin C. Wyman, M.D., Director of the McCluer Tumor Clinic, for his outstanding competence and dedication to the patients of this clinic.

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Disseminated Trichinosis

A Case Report Emphasizing Neurological Involvement

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A case of disseminated trichinosis with neurological symptoms is presented. The variability of the neurological manifestations of trichinosis (exemplified by this patient's memory loss, confusion, weakness, and hemiparesis) makes consideration of this diagnosis mandatory for patients with puzzling central nervous system symptomatology.

DISSEMINATED TRICHINOSIS is not a rare disease, and neurological symptoms can be expected in occasional cases. Such a case is reported here, followed by brief comments on the disease in general.

Report of a Case

A thirty-seven-year-old white male was referred for evaluation of left hemiparesis. He had been in good health until two weeks before admission, when (three days after eating a ham sandwich) he first noticed swelling of his eyes, face, neck, and hands, associated with a mild headache. These symptoms subsided spontaneously in two days, following which he experienced two days of diarrhea. Over the next ten days, impairment of recent memory, confusion, generalized weakness, fever, and chills were experienced in succession. During the few days before admission, marked weakness began in the left arm and leg, and swelling in the hands recurred. He was referred to the Neurosurgical Service of Roanoke Memorial Hospitals, specifically for further diagnostic studies of his progressive neurological symptoms.

At admission the patient appeared healthy and the vital signs were normal. Three- to five-millimeter splinter hemorrhages were noted in the fingernails. Confusion and recent memory impairment were notable; the cranial nerves were intact; no sensory changes were present; on motor examination moderate weakness in the left extremities was obvious; tendon reflexes were normal, and no pathological reflexes were observed. The remainder of the physical examination was normal.

The initial impression was left hemiparesis, etiology to be determined.

The following abnormal laboratory values were obtained: ESR 32 mm. per hour, WBC 18760 with 46% segs, 35% eosinophils, 13% lymphocytes, 6% monocytes; bone marrow examination showed approximately 50% eosinophils but was otherwise normal; alkaline phosphatase 105 mU/ml. (normal 30 to 75), LDH 680 U/ml. normal 200 to 500), cholesterol 308 mg.%; the ECG showed non-specific but diffuse ST changes and T-wave flattening.

The admission Bentonite flocculation test for trichinosis was positive 1:640. A trichi-

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nosis skin test showed five mm. induration with erythematous pseudopodia covering a three cm. diameter area; the control was negative. A left deltoid muscle biopsy showed non-specific chronic myositis. In view of the positive serological and skin tests for trichinosis, marked eosinophilia, generalized T-wave changes on ECG, swelling of the face and hands, splinter hemorrhages, and increasing cerebral symptoms and signs, the diagnosis of disseminated trichinosis was made. The patient was treated with dexamethazone, 4 mg. q 6 h for three days, then in decreasing doses. He remained afebrile while under our observation, although fever had been reported before admission. There was steady improvement of his muscular weakness and mental confusion. Use of thiabendazole[1,2] was considered, but was deemed unnecessary in view of the satisfactory response to dexamethazone. By the sixteenth hospital day the alkaline phosphatase had returned to 50, the LDH to 165, and the Bentonite flocculation test had increased to 1:2560. He was discharged on the twenty-fourth hospital day, and three weeks later was apparently completely recovered.

Discussion

Trichinosis, a self-limited infection of the human intestine (by the adult roundworm, *Trichinella spiralis*) and of striated muscle (by its larvae), is the commonest helminthic infection of man and is estimated to affect over twenty million persons in the United States.[3]

The intestinal phase of trichinosis is rarely diagnosed. Symptoms occur during larval invasion and migration in the first and second weeks of infection, as a result of local inflammation when larvae invade vital tissues. Later on, during migration and encystation, there is a systemic reaction of the host to this foreign protein. Mild constitutional symptoms resemble many other diseases, and it is thought that only a small percentage of infected persons have a sufficient number of larvae to produce the clinically recognizable disease.[4]

Six to seventeen per cent of patients with symptomatic trichinosis will exhibit symptoms of central nervous system invasion, manifested by headache, tinnitus, vertigo, deafness, confusion, memory loss, stupor, psychotic behavior, delirium, coma, or varied focal neurological signs of mono-, hemi-, para-, and tetraplegia, aphasia, convulsions, or polyneuritis.[5, 6] Encephalitis is more common during larval migration, focal signs more common during encystation. Cardiovascular system involvement may produce electrocardiographic changes (23%[5,6]), precordial pain, tachycardia, hypotension, venous and arterial thromboses, and subungual splinter hemorrhages.

The prognosis is generally good, and residual muscular or CNS damage is unusual. However, following severe infections, muscular weakness or focal neurological signs may persist. The mortality rate is generally regarded as five to six per cent, but vital statistics fail to confirm this high a rate. Either the mortality figure is too high, or many fatal cases are clinically misdiagnosed.[6]

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Generic and Trade Names of Drugs

1. Dexamethazone—Decadron
2. Thiabendazole—Mintezol

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THE INCIDENCE OF GONORRHEA IN THE PRIVATE AND CLINIC PATIENT—
Brosch-Given-Pariser-Farmer
(*Continued from page* 158)

cidence in our private practice, a predominately upper middle class white population, does not seem to justify the use of a routine gonorrhea culture although it is a simple procedure to obtain a culture if gonorrhea is suspected.

Summary

Cervical cultures were obtained from 2,392 private and clinic patients both obstetrical and gynecological. The overall incidence of asymptomatic gonorrhea was 5.2% in this study ranging from a low of 0.6% in the private patient to a high of 11.2% in the non-white gynecological clinic patient.

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Clinicopathological Conference . . . .

Fever, Abdominal Pain, and Eclampsia

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PATHOLOGIST:

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U. Va. Autopsy 11938

Clinical History

L.M.H., a 21 year old female, was admitted to the University of Virginia Hospital on 1/21/61 for evaluation of abdominal pain.

Two months prior to her expected first delivery, the patient was noted to have hypertension and albuminuria during a routine prenatal visit. Previous heat sensitive, pruritic palmar erythema had been treated with antihistamines and topical steroids with fair control. She was hospitalized elsewhere with a normal physical examination except for a blood pressure of 150/100. Laboratory studies showed: hematocrit—36%; BUN—28 to 36 mg%; uric acid—6.3 mg%; creatinine—1.01; BSP—8%; urine—1-4+ albumin, 20-25 WBC, and 2-5 RBC. Antinuclear factor, 3+ and 4+ on two occasions; L.E. cell prep.—no definite L.E. cells. She was treated with thiazides, tranquilizers, and antihistamines, with a decrease in proteinuria, and a fall in blood pressure to 140/90, and was discharged.

A generalized convulsion, in January, led to rehospitalization, where further seizures were controlled with amytal and magnesium sulfate. She recalled three days of fever, nausea, vomiting, headache, and epigastric pain. Physical examination disclosed a blood pressure of 160/120, pulse 110, and temperature 99°, but no other abnormalities. Abdominal pain persisted and a stillborn was delivered five days after admission. Subsequently, abdominal pain was severe, epigastric, radiated to the back and sub-xiphoid area, and required narcotics for control. Laboratory studies revealed a white blood count ranging from 10-30,000 with toxic granulation; platelets—147, to 21,000; hematocrit—42 to 27%; bilirubin—normal; uric acid—9.5; and serum glutamic oxoloacetic transaminase—74 to 103. Five blood cultures were sterile; urine culture showed aerobacter species, 1-4+ albumin, 4-5 WBC, and 10-15 RBC. Lupus prep—few L.E. cells; heparin beads (L.E. prep)—negative.

Because of persistent low grade fever, pulmonary infiltrates, abdominal pain, and no change after antibiotics including tetracycline, penicillin, kanamycin and colistin, she was transferred to the University of Virginia Hospital.

On admission 1/21/69, she was acutely ill, toxic, and in obvious discomfort. The blood pressure was 150/80, pulse 120, temperature 37°C, and she was perspiring freely. The chest was dull at both bases posteriorly and diminished breath sounds were heard in the same areas. The abdomen was remarkably tender in the epigastrum, distended generally, "boggy" to touch, and

without rebound tenderness. Pelvic examination confirmed these findings. There was two finger hepatomegally, trace edema, and a ballotable patella on the right.

White blood counts averaged 30,000, hematocrit remained at about 30% despite 20 units of transfused blood, and platelets remained about 20,000. Urea ranged from 200 to 400 and creatinine clearance was less than 10 ml/min. Liver enzymes were normal as was a bilirubin. Blood complement was 44, antinuclear factor test—positive, and L.E. preps revealed an occasional L.E. cell. The urine contained 12-14 WBC, RBC, and RBC casts, no doubt refractile fat bodies were seen, and albumin loss was about 1 gram in 24 hours. Cultures of pleural and joint effusions, blood, urine, and peritoneal fluid were unremarkable. Sputum grew gram negative rods. Cardiogram showed sinus tachycardia, x-rays of the abdomen showed no free air and ileus. Earlier G.I. studies showed esophagitis and a normal stomach.

Her course in the hospital was generally downhill. The pleural and peritoneal fluids appeared as transudates, with cell counts of about 100, mostly polys. Because of the thrombocytopenia and renal failure, she was begun on 60 mg of prednisone daily, shortly after transfer. Because of oral candidiasis, antibiotics were discontinued and oral mycostatin was given. Hypoxemia and ventilatory difficulty resulted in a tracheostomy. G.I. bleeding, renal failure, and progressive coma ended in a quiet death on 2/4/69.

Clinical Discussion

Dr. Buchanan: "Where shall I start?" said Alice. "Why", replied the mock turtle, "Start at the beginning and proceed to the end." In this very "simple" case—for that was how Dr. O'Brien described it when he sent me the protocol!—I intend to start at the beginning and proceed to the end.

The patient had had hot, red, itchy palms for four years. I think these are "red herrings". Certainly palmar erythema occurs in a number of conditions, including systemic lupus erythematosus, but they are not itchy. Red hot, itchy palms suggest the patient had neurodermatitis or contact dermatitis, in which case the skin would be fissured and hyperkeratotic. The webs of the fingers would be particularly affected in contact dermatitis. If the skin was not fissured and hyperkeratotic then the most probable diagnosis is cheiropompholyx. The palmar skin may appear normal in this condition and the typical "sago-grains" may be only detected when the finger is rubbed over the affected skin. If the patient had cheiropompholyx then there is a high probability she also had fungal infection of her feet. The history was not of erythromelalgia, which may occur in systemic lupus erythematosus,[1] and there was no history of Raynaud's phenomenon. Palmar lesions occur in systemic lupus erythematosus[2] and biopsy will reveal typical histological changes. Recently it has been shown that staining involved or uninvolved palmar skin for alkaline phosphatase activity shows irregularity of the capillary loops with branching, "dead-end" spurs, and coiling.[3] It may have been helpful to examine the palmar skin in this patient. However, I reiterate that the red palms are "red herrings".

On admission to the Martha Jefferson Hospital on December 12, 1968, the patient presented two of the three cardinal features of pre-eclampsia, namely, hypertension and proteinuria. If this was the patient's first pregnancy and blood pressure and urinalysis were normal previously, then the diagnosis of pre-eclampsia is quite acceptable. The patient had a small uterus for her expected date of delivery, and this is consistent with pre-eclampsia, where poor placental circulation results in poor fetal development. An abdominal x-ray would have been helpful in determining fetal maturity. At the time of the patient's admission the urine findings are consistent with pre-eclampsia. The blood urea was high; the upper range of the blood urea in pregnancy does not exceed 20 mg. per cent. The slightly raised blood urea is

consistent with pre-eclampsia. The serum uric acid is high, which is consistent with pre-eclampsia. Normally in pregnancy the serum uric acid levels are low—indeed sufficiently low at times to suggest a xanthine oxidase deficiency. During the last trimester the serum uric acid rises to non-pregnant values, possibly due to the production of uric acid by the fetus,[4] and in pre-eclampsia mild hyperuricemia develops. Platelets were noted to be decreased on a blood smear. One would really want to know what the platelet count was. In any case, a slight decrease in platelets is often present in pre-eclampsia.

The most significant finding on the patient's first admission to the Martha Jefferson Hospital was the positive antinuclear factor test. In a series of normal female blood donors studied in Glasgow by Beck[5] approximately five per cent had positive tests, but this was almost entirely due to positive tests in patients over 50. The finding of a positive test in a 21 year old female patient is therefore highly significant. It would be helpful to know the titer of the antibody and also the morphological pattern of staining. The different morphological patterns of antinuclear staining have been developed by Beck.[5,6] "Homogeneous" staining is due to antibody to DNA-histone complex and is present virtually in all active cases of systemic lupus erythematosus. The "speckled" pattern of nuclear staining is due to antibody to a saline soluble protein which is not part of the DNA-histone complex. "Nucleolar" antibodies react with a protein associated with nucleolar RNA, but not with cytoplasmic RNA. The fourth nuclear antibody, which gives a "membranous" or "shaggy" pattern of staining, is directed against DNA. This antibody is present in 20 to 30 per cent of patients with systemic lupus erythematosus, and only rarely in patients with other forms of connective tissue disease or drug-induced lupus.[7] When tests are done for DNA antibodies which have been thermally denatured to expose reactive sites, about 70 per cent with systemic lupus erythematosus have antibodies (increased sensitivity) but antibodies are found also in quite a high proportion of patients with other connective tissue diseases (decreased specificity).[8] The indirect immunofluorescence technique is therefore a superior test from the clinical stand-point. The important point is that when DNA antibodies are present this augurs a poor prognosis, because of their association with lupus glomerulo-nephritis.[9]

The patient, I note, was allowed home for Christmas. This would not have happened in Glasgow where we prefer the pagan festival of Hogmanay (31st December)! When the patient was readmitted on the first of January, the epigastric pain she was complaining of would have been attributed to a well-known national beverage! But in this patient the epigastric pain must be considered as impending eclampsia. The convulsions are consistent with eclampsia or with systemic lupus erythematosus, which they may precede other manifestations by months or even years.[10] The renal deterioration noted at this time is consistent with eclampsia or with systemic lupus erythematosus. Pregnancy has no consistent effect on the course of systemic lupus erythematosus,[11] and systemic lupus erythematosus has no effect on the baby. An Irish-American and his colleagues, Dziubinski et al.,[12] reviewed the obstetrical histories of 48 patients compared with matched controls and concluded that prenatal mortality and spontaneous abortions were no more common in patients with the disease. Babies may have L.E. cells or positive antinuclear factor tests for 15 weeks after birth without ill effect.[13] Occasionally they may develop hemolytic anemia, leucopenia, and thrombocytopenia due to placental transfer of IgG antibodies to red cells, leucocytes and platelets respectively.[14]

On January 5, 1969, the patient became febrile, had pulmonary infiltrates, a right-sided pleural effusion, and a marked leukocytosis. This is consistent with a pneu-

monia. The pneumonia may have been of an aspiration type, since the patient had received a lot of narcotics, and she could have inhaled vomitus during one of her convulsions. Negative blood cultures are often found in aspiration pneumonia. But had this been a straight forward pneumonia the fever would have responded to the antibiotic therapy. Cold agglutinins were demonstrated at this time. This raises the possibility of primary atypical pneumonia due to *Mycoplasma pneumoniae*. Renal failure has been reported in association with the cold-agglutination syndrome.[15] The Coombs test was negative, but the patient did develop an anemia and reticulocytosis. A serum haptoglobin determination would have been helpful in determining whether the anemia was due to hemolysis or to blood loss. It would also have been helpful to have had tests for antibodies to streptococcus MG and to mycoplasma. However, the subsequent illness is not consistent with a mycoplasma pneumonia, and one would have anticipated a response to tetracycline therapy.

The patient had tests for cold haemoglobinuria, presumably tests for autohemolysin. This is an extremely rare disease, and one would have thought tests for paroxysmal nocturnal hemoglobinuria more appropriate. This is a great simulator and is often associated with fever, abdominal pain, and hemoglobinuria and hemosiderinuria. Ham's test, which consists of acidifying the serum to pH 6.5 to 7 with resulting hemolysis, is specific for the disease. Paroxysmal nocturnal hemoglobinuria is frequently associated with venous thrombosis especially in the brain and portal system. This patient had convulsions which could have been due to thrombosis of the sagittal sinus. The abdominal pain could have been due to hepatic vein thrombosis—the Budd-Chiari syndrome. The patient developed hepatosplenomegaly, and the bowel hemorrhage could have been consistent with mesenteric vessel thrombosis, which frequently occurs in the Budd-Chiari syndrome. The edema of the legs could have been due to an associated thrombosis of the inferior vena cava. However, patients with the Budd-Chiari syndrome invariably develop jaundice, and the serum bilirubin was normal.

Pancreatitis as a cause of the severe abdominal pain was excluded by the normal serum amylase. Hepatitis was excluded by the normal serum bilirubin; presumably the serum alkaline phosphatase and transaminases were normal? The B.S.P. retention was extraordinarily high, and, I think, with the normal serum bilirubin, reflects hepatic venous congestion rather than hepato-cellular damage. A cholecystogram was done, but it is highly unlikely that a woman of 21 would have had gallstones. If she had had gallstones, she might conceivably have had a congenital hereditary spherocytosis, but this was excluded by the normal osmotic fragility and a normal blood film. A peptic ulcer was more or less excluded by the normal barium meal: in any case peptic ulcers heal during pregnancy.

A woman who has had a baby, especially who has had eclampsia and abdominal pain, must be considered as having bilateral renal cortical necrosis. This can be a cause of severe abdominal and lumbar pain, and the fact that the patient had a blood urea of over 200 mg. per cent is consistent with this diagnosis. The diagnosis of disseminated intravascular coagulation[16] should have been considered at this time. This syndrome is due to release of tissue thromboplastin into the blood which causes widespread thrombosis in small vessels. This thrombosis uses up fibrinogen and other coagulation factors, and platelets, which result in hemorrhages. Patients with this syndrome always have a history of shock,[17] and one wonders if this was present at any time. The leukocytosis and gastro-intestinal hemorrhages are consistent with this syndrome. It would have been helpful when she was in the Martha Jefferson Hospital to have tested for fibrin degradation products and cryofibrinogen-

emia. The blood film did not show microangiopathic hemolytic anemia (burr, triangular and helmet cells).

The other point is whether the patient might have had some unusual infection. She could have had, for instance, a bacterial endocarditis.[18] This can present with renal failure and hypertension, and a right sided valvular lesion can give rise to pulmonary emboli, which could explain the pulmonary lesions, although she had had no hemoptysis. The convulsions, congestive cardiac failure, fever, leukocytosis and thrombocytopenia are all consistent with bacterial endocarditis. However, the blood cultures would have been positive. A gram negative or, especially as the patient had had a stillbirth, a *Clostridium welchii* septicemia could be considered, but I think are both excluded by the negative blood cultures. The only infection that the patient could conceivably have had was miliary tuberculosis. The chest x-ray can be negative, although a miliary pattern may be defined by a "soft" film. A negative tuberculin test can occur in miliary tuberculosis, although extremely rare, and the patient needs to be literally teeming with bacilli. Urine cultures for A.F.B. were negative, and I think the probability of miliary tuberculosis is very small.

On admission to the University of Virginia the picture changes with the demonstration of classical L.E. cells. L.E. cells occur in a variety of diseases other than systemic lupus erythematosus, including severe rheumatoid arthritis, which the patient obviously did not have. L.E. cells occur in progressive systemic sclerosis and dermatomyositis, but there is nothing in the history to suggest the patient had either of these diseases. Positive L.E. cells occur in aplastic anemia and lymphoma:[19] these can be reasonably excluded, since for the latter one would have to postulate that the hypertension and renal failure were due to bilateral renal involvement from lymphoma. Could the patient have had lupoid hepatitis? The hepato-splenomegaly was consistent with this, but the normal serum bilirubin is against it, and only rarely does one find renal involvement in lupoid hepatitis.[20] It would have been helpful to have looked for smooth muscle antibodies, which are frequently positive in this condition.[21] The patient had received a profusion of drugs. Hydrallazine is the classical cause of drug-induced lupus erythematosus.[22] Presumably the patient did not receive this drug for her hypertension? Therapy with anticonvulsants must be given for some time before lupus develops, and so it is unlikely that these could be the cause of the L.E. cells in this patient. L.E. cells have been reported in penicillin allergy,[23] which the patient did not have, and during therapy with tetracycline, especially degraded tetracycline.[24] When improperly stored and exposed to high temperature and humidity, certain formulations of tetracycline absorb moisture. This leads to the production within the capsule of a highly acid medium, such that some of the tetracycline is epimerized to epianhydrotetracycline. This substance leads to systemic lupus erythematosus and a type of Fanconi syndrome.[25] But I believe that all offending formulations have now been withdrawn. The thiazide derivatives have been implicated as a cause of renal necrotizing vasculitis,[26] but I am unaware of them causing systemic lupus erythematosus.

The diagnosis, therefore, rests on systemic lupus erythematosus. The patient had congestive cardiac failure and gallop rhythm. This is consistent with lupus myocarditis: 50 per cent of patients have myocarditis at post-mortem.[27] The heart failure may have also been due to verrucous endocarditis: less than 10 per cent are diagnosed during life.[27] The abdominal pain is consistent with lupus arteritis affecting the mesenteric vessels, as are the ulcerations and hemorrhages which the patient developed. The lesions in the oesophagus are consistent with systemic lupus erythematosus. The "boggy" pelvis

was, I think, part of the generalized edema. The pulmonary lesions are consistent with lupus lung disease, and congestive cardiac failure. Classically the lesions are described as areas of linear atelectasis, but usually they have a non-specific appearance. If the patient had had polyarteritis nodosa with pulmonary infiltrates one would have expected an eosinophilia, which she had not. The blood gases indicate the patient was desperately ill. The plasma oxygen was extraordinarily low, presumably due to congestive cardiac failure and shock as it did not rise with administered oxygen. The low plasma CO_2 was due to hyperventilation. The fact that the fever did not respond to antibiotic therapy is consistent with systemic lupus erythematosus. I note that polymyxin was given and this is, of course, nephrotoxic. Perhaps it would have been better avoided? There was no arthritis; the fluid in the knee was due to edema. The renal lesion was lupus glomerulo-nephritis: the proteinuria, azotemia and hypertension are entirely consistent. A renal biopsy would have been helpful, but was contra-indicated by the thrombocytopenia. It would have been helpful to have repeated the serum complement, which would have been depressed.

The only other diagnostic possibility is thrombotic thrombocytopenic purpura. This is an acute illness, often in young persons, characterized by fever, convulsions, renal failure, gastro-intestinal hemorrhages, hepato-splenomegaly, leukocytosis, thrombocytopenia and an anemia of either normocytic normochromic or microangiopathic hemolytic type. These patients, however, are usually jaundiced. There is an association between this disease and systemic lupus erythematosus.[28] The fact, however, that no fibrin degradation products were present is against this diagnosis. A skin biopsy might have been helpful and shown the typical arterial lesions.

Finally, some comments about therapy. I think that as soon as L.E. cells were demonstrated in this patient massive corticosteroid therapy should have been given. Dubois[29] recommends such therapy in desperately ill patients. The patient was being covered with antibiotics, including isonicotinic acid hydrazide, and the risk of infection was minimal. I wonder why a peritoneal dialysis was carried out, rather than hemodialysis, since the patient had ascites. Terminally the patient had severe thrombocytopenia and hemorrhages. Multiple transfusions had been given. Should she not have had fresh blood or concentrated platelets?

Now, comes the moment of decision. What did this lady have? I think she had:

1. Systemic lupus erythematosus *sine* "lupus".
2. Lupus glomerulonephritis.
3. Pulmonary inflammatory lesions such as are seen in systemic lupus erythematosus.
4. Mesenteric arteritis, with esophageal and bowel ulcerations, which were hemorrhaging.
5. Lupus heart disease: myocarditis and perhaps verrucous endocarditis.
6. Massive intracerebral hemorrhage (immediate cause of death).
7. Splenomegaly, with "onion-peel" lesions in the arterioles.
8. Cheiropomphyolyx.

Moderator: Dr. Buchanan, you've been very heroic in making a diagnosis without asking Dr. Keats for any assistance. Perhaps we should let him show the x-rays, and then you might want to change your mind.

Theodore Keats: The initial chest film of the 28th shows evidence of cardiomegaly and bilateral basilar pleural effusions. There may be a pericardial effusion as well. A scout film of the abdomen shows evidence of peritoneal fluid, with loss of definition of the intra abdominal organs, and the kind of ileus one sees with acites. A cholecystogram made on the next day shows a faintly visualized gallbladder and again evidence of the presence of fluid in the peritoneal cavity. The GI series is interesting in that it

showed atony of the esophagus at fluoroscopy, which is most characteristic of the change seen in scleroderma, but also seen in Lupus or any of the collagen diseases. In addition, there is marked irregularity of the mucosa of the esophagus which could be due to ulceration and suggests that perhaps the patient has moniliasis of the esophagus.

The rest of the examination of the gastrointestinal tract shows peculiarity of the small bowel pattern suggesting that there is edema of the bowel wall as evidenced by this wide separation of the valvulae. Follow-up chest films show that on the 29th, she developed a very marked pulmonary infiltrate in both lungs, again with evidence of bilateral effusion, and this was ascribed to pulmonary edema rather than pneumonitis. Throughout the rest of her admission, she demonstrated rather striking adynamic ileus, which involved the colon predominantly but also in time showed dilatation of the small bowel. And this was so consistent that one wonders if perhaps she had occlusive mesenteric arterial changes. On the 30th, in addition to her pulmonary edema, she had large bilateral pleural effusions.

Dr. Buchanan: The changes in the lung are really essentially nonspecific. She had a big heart and she had bilateral basal lesions and effusions. And I think these are consistent with SLE. And, with congestive cardiac failure. The lesion in her esophagus —she had apparently atony of her esophagus. This is consistent with scleroderma, or, I should have said, with SLE. Then, if she had that simply with SLE, one would have anticipated this girl would have had Raynaud's phenomenon. As far as I know, you don't get it without Raynaud's phenomenon. But, if I could just ask you a question: When you take a desperately ill patient and do a barium swallow on him, can toxicity not result in some slowing up of the descent of the barium?

Dr. Keats: Oh yes, there is no question about that. Ill people don't swallow well, but I must say that the peculiar pattern of the esophageal mucosa would indicate that intrinsic disease is present.

Dr. Buchanan: The small bowel pattern, and this is consistent with scleroderma lesions in the bowel, makes one think of scleroderma, but then, she could have this from arteritis associated with SLE, and since she didn't have any skin lesions, and since scleroderma is rare, I'm going to stick to what I said and not change the diagnosis. I'm sure I'm wrong, but there it is.

Query: One of the perplexing problems about this lady was the severe abdominal pain which is somewhat played down in the protocol, but this was of concern to everyone following her in the hospital. Her abdomen at no time was tense and board-like but always had a boggy feeling, and was of quite deep concern, and various diagnoses were raised, one of which was polyseriositis. How much pain and abdominal distention does one usually see with polyserositis, and was that consistent in that it didn't respond to the steroids she was put on?

Dr. Buchanan: Well, I assume that you mean polyserositis secondary to Lupus. I think this lady's abdominal findings are entirely consistent with what one sees in a Lupus erythematosus. They get mesenteric arteritis, which gives them extremely severe abdominal pain; they can get peritonitis. She didn't have this. The fluid that came off her abdomen was a transudate, not an exudate. They're often seen by surgeons, they often are sent for laparotomy, and of course this can present a tremendous problem to the surgeon, particularly if they have thrombosed a major mesenteric vessel and had areas of gangrene. I don't think there's anything inconsistent with this lady's abdominal findings—anything inconsistent with the diagnosis of SLE. This is what I would go for.

Dr. John S. Davis, IV: The thing that bothered me the most was the very high white count. It has never been my experi-

ence to see a white count of 30,000 in SLE. I didn't feel that Lupus was not the diagnosis, but certainly all who saw her thought there must be another very significant secondary factor such as severe infection. I might also add that after steroids were started she did have a period when she really did quite well. I remember she was reading books and talking and seemed to be quite lucid. The sudden deterioration at the end makes me wonder if the high white count isn't telling us something is going on besides uncomplicated SLE.

Dr. Buchanan: I might just mention the question about leukocytosis. Certainly leukopenia is the classically reported finding in systemic lupus erythematosus. If they do become ill, for instance, with a coincident infection, they can develop marked leukocytosis, that can easily break through from a leukopenia into a leukocytosis, and they can develop a marked leukocytosis simply from acute systemic lupus erythematosis. This we have witnessed ourselves, and it is reported in the literature. I take Dr. Davis' point that it usually is a leukopenia, but I think this is not inconsistent.

Query: Isn't it unusual to have so few L.E. cells demonstrable with the various L.E. cell preparations when tests for antinuclear factor are positive and a polymorphonuclear leukocytosis is present?

Dr. Buchanan: No, I don't think so. I think that if a patient is suspected of having acute lupus, and if you tell me the antinuclear factor test is negative, I won't accept the diagnosis. But the LE prep can be negative. It's a crude test; it can be negative and is negative in quite a proportion of patients who were acutely ill with SLE. The best post mortem illustrations which we have in Glasgow are of a patient who died from acute SLE, not unlike this lady, with beautiful Libman-Sachs endocarditis and so on—had consistently negative LE preps. But her antinuclear factor, including the membranous type of staining, was positive, in titers well over 1:1000. I wouldn't think that that was not inconsistent.

Pathological Discussion

Dr. Foster: There are an unusually large number of anatomical findings in this case, and I think it is best to try to make some sense of them by looking at them chronologically. I can't really start at the beginning and proceed to the end, but I think that it's possible to recognize lesions of approximately three different ages. Among the oldest lesions were the "wire-loop" thickenings of the glomerular capillaries, that are one of the more characteristic anatomical features of systemic lupus erythematosus (fig. 1). Dr. Sturgill demonstrated the presence of gamma globulin along the glomerular capillary loops, with a fluorescent antibody preparation, a finding entirely consistent with the diagnosis of systemic lupus. There were also a few adhesions between glomerular tufts and Bowman's capsule, suggesting that this nephritis was of some duration. Next, we have a group of lesions involving the myocardium, the liver, and bone. The liver contained widely scattered, depressed foci of organized necrosis, the largest of which was about 2 cm. across. In a typical microscopic section (fig. 2), the liver cells have disappeared and are partly replaced by loose fibrous tissue. An organized thrombus is seen in one of the arteries, but there is no evidence of inflammation in the wall of that artery. Foci of organized necrosis were also present in the myocardium, although the patient did not have a significant degree of coronary atherosclerosis and had no inflammatory disease of the arteries of the heart. Finally, in this group of lesions, focal necrosis of bone was also present. That this was of about the same age as the liver and myocardial necrosis is shown by the presence of reactive periosteal new bone formation adjacent to the dead bone. The histological features of this group of lesions suggest that they are all several weeks old, and I am tempted to re-

late them to the convulsive episode that occurred during the patient's last trimester of pregnancy one month before she died. Before proceeding to the most recent lesions, I want to mention, for whatever it is worth, that the uterus contained some retained placental tissue following the stillbirth which occurred a few days after the convulsive episode. The final group of lesions is the largest and also the most widespread. It is probable that most of these are only a day or two old, and that none of

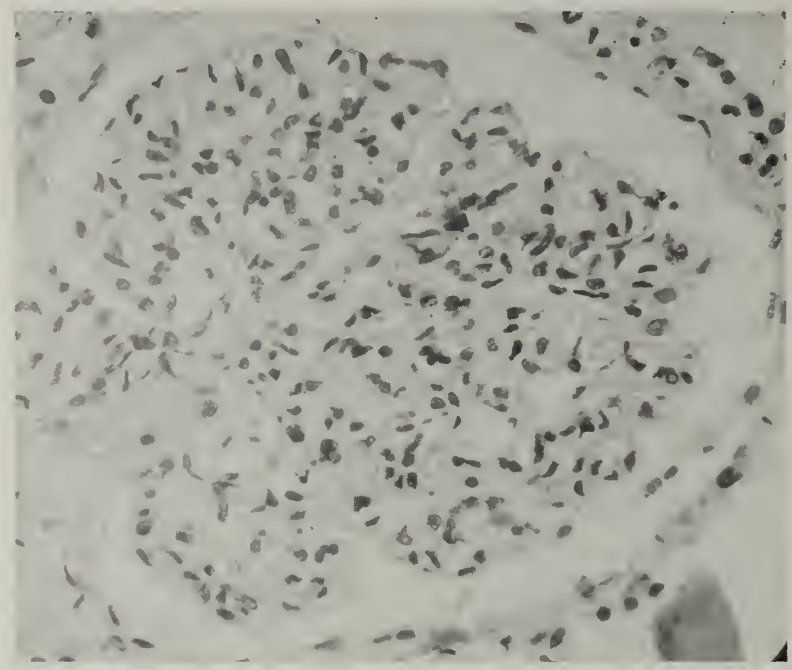


Fig. 1. Slightly hypercellular glomerulus with trich basement membranes.
H + E x 500

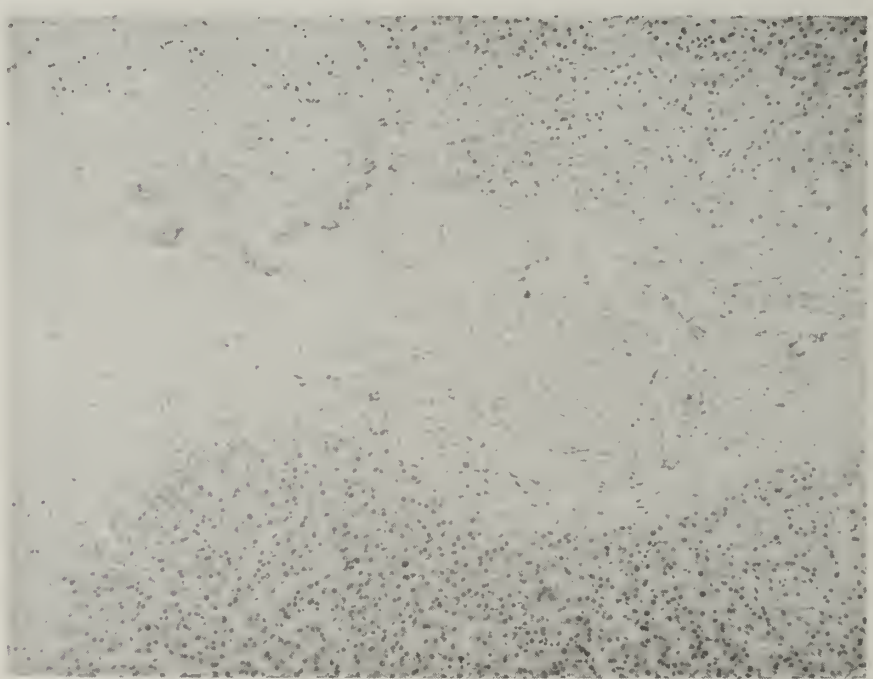


Fig. 2. Histologic section of liver with scar and organized thrombus in a small artery.
H + E x 120

them are much more than a week old. A typical lesion is seen in a small artery in the hilus of a lymph node (fig. 3). This is what is usually referred to as a hyaline thrombus. The wall of the blood vessel itself is apparently normal. Thrombi like this were found in small blood vessels in almost all parts of the body. They were particularly prominent in various parts of the gastrointestinal tract. Large areas of ulceration in the small bowel and large bowel were probably the result of this thrombosis. The severe ulceration that was present in the esophagus seems more chronic than in the other parts of the gastrointestinal tract, and may not be entirely attributable to the small thrombi that were present. No fungi were identified in the esophagus. The small arteries of the kidney and also the glomerular capillaries contained hyaline thrombi. Innumerable small infarcts of very recent origin were scattered throughout both kidneys. A bizarre manifestation of the thrombotic process was seen in the biliary tree. The gallbladder mucosa was ulcerated and hemorrhagic, and the common bile duct was distended by a large, firm cast of clotted blood which protruded through the ampulla of Vater into the duodenum. Probably related to the hyaline thrombosis was the presence of large friable vegetations on the aortic valve. These are not associated with any appreciable degree of inflammation of the valve substance and do not contain any bacteria. Their location and the fact that they were so friable lead me to believe that they are nonbacterial thrombotic endocarditis, rather than the Libman-Sachs endocarditis of Lupus. One might wonder whether the various plugs in the small vessels that I have shown could not have been emboli that originated from this endocarditis. Such embolization certainly occurs, but in my experience, it has always involved larger vessels. Furthermore, similar thrombi were found in small pulmonary artery branches, lending support to the idea that the intravascular plugging was due to in-situ thrombosis rather than embolization. Extensive involvement of pulmonary alveolar capillaries by the thrombotic process was also present, and it seems likely that this contributed to the patient's respiratory difficulties (fig. 4). Thrombi in small brain arteries

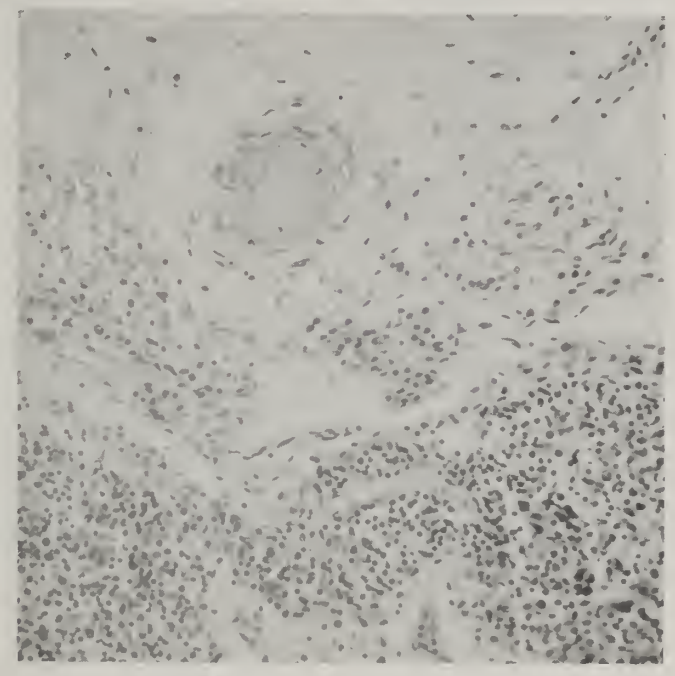


Fig. 3. Histologic section of lymph node with a fibrin thrombus occluding a small artery. H + E x 250

were associated with massive hemorrhagic necrosis of the pons. The final anatomical event, which probably cannot be attributed directly to the hyaline thrombosis was the presence of a huge perforated ulcer of the posterior wall of the stomach. This ulcer, about 8 cm. in diameter, has all the characteristics of a rapidly progressive acute peptic ulcer.

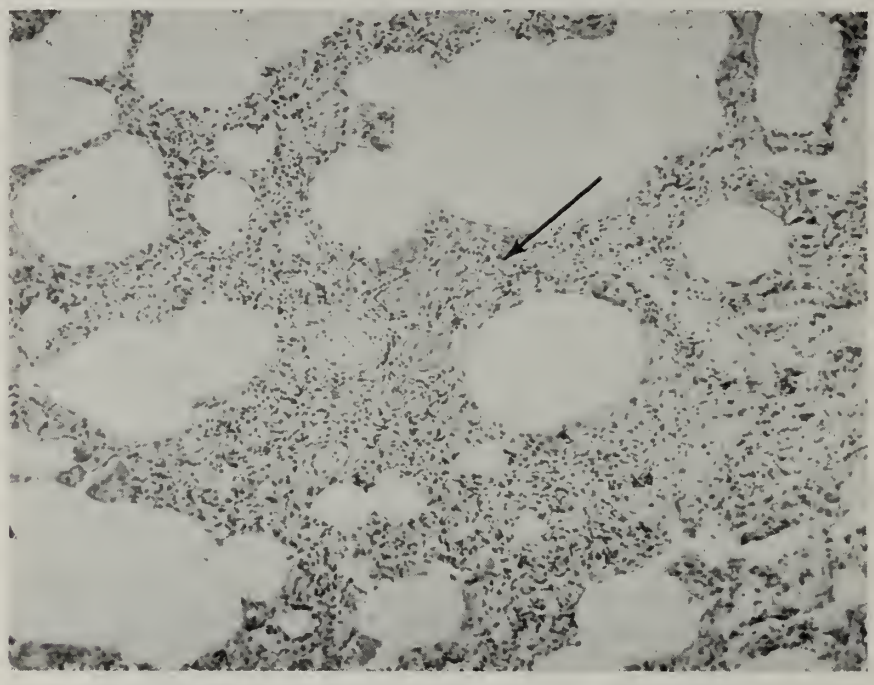


Fig. 4. Histologic section of lung with fibrin thrombus in small arteries and capillaries. H + E x 120

Taking the clinical and anatomical findings into account, I think that we are on very firm ground in making a diagnosis of systemic lupus erythematosus. Although some of the clinical laboratory features of thrombotic thrombocytopenic purpura were missing in this case, as pointed out by Dr. Buchanan, I believe that this is a reasonable diagnosis in the face of thrombocytopenia, leukocytosis with a shift to the left, neurological manifestations and widespread hyaline thrombosis. The occurrence of convulsions during the last trimester of pregnancy and the subsequent evidence that thrombosis occurred at that time could support best a diagnosis of eclampsia. One also wonders about the possible pathogenetic significance of the retained placental tissue.

In summary, then, we have a patient with systemic lupus erythematosus and pregnancy, who had two episodes of disseminated hyaline thrombosis, one while she was still pregnant, and the other following delivery. The pathogenetic mechanisms of the thrombotic disease remains obscure whether or not one names the disease "thrombotic thrombocytopenia purpura". At any rate, there is precedent in the literature for the concurrence of thrombotic thrombocytopenic purpura, both with systemic lupus erythematosus and pregnancy.

Anatomical Diagnoses

Membranous ("Lupus") glomerulonephritis

Splenomegaly (350 gm)

Fibrinous pleuritis and bilateral pleural effusions

Widespread hyalin thrombosis of small blood vessels (thromboic thrombocytopenic purpura)

Organizing focal necrosis in the liver myocardium and bone

Subinvolution of uterus with retained placental fragments

Thrombotic non-bacterial endocarditis of aortic and mitral valves
Focal ulceration of the esophagus, stomach small intestine, gall bladder, urinary bladder, renal pelvis and ureters
Focal acute necrosis in the kidneys
Cast of clotted blood in the common bile duct
Acute perforated gastric ulcer
Recent massive hemorrhage in the pons

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Public Health....

MACK I. SHANHOLTZ, M.D.
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Virginia's Child Neurology Program

Diseases of the nervous system account for a high proportion of the afflictions of children. The tragedy resulting from derangements of the nervous system is that such derangements create a vast gulf between those who are normally endowed and those who are afflicted. At stake is man's adaptation to an environment of ever increasing complexity and it is getting increasingly difficult to place the maladapted.

All the more tragic is the fact that the intricacies of the nervous system are such, and its metabolic requirements are so high, that only small amounts of damage lead to vast dysfunctions. Relatively small derangements in blood flow and metabolism leave permanent and devastating sequels manifested by abnormalities in cognitive, conative or emotional behavior, defects in motor performance or convulsive seizures.

The curtailment of abnormalities by early case finding, adequate recognition, adequate treatment and rehabilitation is of utmost importance and prevention of maladaptation is even more significant than the amelioration of an already raging disability.

Because of the social misfortune suffered by the epileptic which affects at one time or another more than 2% of the population, a Seizure Control Program was begun in 1958 with the cooperation of the Bureau of Crippled Children of the Virginia State Department of Health and the Department of Neurology at the School of Medicine, University of Virginia, plus the assistance of the Easter Seal Society for the early recognition and adequate treatment of convulsive disorders.

Epilepsy can be caused by a multitude of conditions including genetic abnormalities, congenital anomalies, abnormal circumstances affecting the pregnant woman including infections, drugs, lack of oxygen, trauma at birth, infections of the newborn, toxic substances, head injuries, circulatory disturbances including hemorrhages, thrombosis, hypertension and hemorrhagic diseases, metabolic and nutritional disturbances including hypoglycemia, disorders of calcium metabolism, glycogen-storage disease, endocrine disorders, brain tumors, and many others.

There are many different types of epileptic seizures ranging from the least obtrusive, momentary starting attacks of petit mal to the full blown generalized convulsion and ranging in frequency from an occasional attack associated with fever to 30 or more attacks a day. It was because of the serious social and public health problem of epilepsy that this was where the initial thrust of the program was aimed. Moreover, it was felt that early recognition of the cause of seizures, where this could be ascertained, would lead to the possible avoidance of protracted invalidism. Also the armamentarium of anti-convulsant medications now available allow adequate medical control of seizures in the majority of those patients coming under treatment.

The Seizure Control Program had its Master Clinic located at the University of Virginia Hospital with field clinics in Abingdon, Norton, Roanoke, South Boston and Arlington. It became evident, however, that the program had to expand to encompass disorders of neurological function other

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than those presenting with a convulsive disorder and this led to the formation of the Child Neurology Program which incorporated the original Seizure Control Program. Additional clinics were opened in Lynchburg and Winchester, the Arlington Clinic expanded from one clinic every three months to one clinic every two weeks and a consultative relationship was established with mental retardation clinics throughout the State. The full neurological diagnostic resources at the University of Virignia Hospital, including neurological service beds, EEG, contrast radiography, pediatric research and chromosome laboratories and the neuro-physiology and neuro-chemistry laboratories are available to the program. There are patients who are found during evaluation to require neuro-surgical intervention and they are referred to the closely-associated child neuro-surgery program.

Some of the conditions already referred to the child neurology program include abnormalities of skull size and shape; e.g., hydrocephalus which is a condition the cause of which can often be treated and the neurological sequels can frequently be avoided by early treatment. Subdural hematomas often present as abnormalities in head size and are amenable to treatment. Other disorders of the skull and spine including defects in spinal fusion and progressive spinal deformities, spinal tumors and syringomyelia can often be corrected. Other abnormalities such as neurofibromatosis, tuberous sclerosis, Von Hippel's disease and the Sturge-Weber syndrome are not just of academic interest but are frequently associated with remedial intracranial lesions. For example, recently a child with neurofibromatosis presented with progressive loss of vision due to a tumor of the optic nerve, and another such child presented with a remediable spinal tumor which would have shortly rendered her incapable of the use of either arms or legs had it not been removed.

Abnormalities of motor function, including spastic or flaccid paralysis and abnormalities of movement due to basalganglia disease are frequently seen. The "waste basket" diagnosis of cerebral palsy is deplored because among these are found patients with Wilson's disease, a treatable metabolic disorder which is fatal if left unattended, other hereditary and metabolic disorders, brain and spinal tumors and inflammatory conditions. Among the floppy children, peripheral neuritis and myasthenia gravis, polymyositis and glycogen-storage diseases have been found among those who had been called cerebral palsy or muscular dystrophy. Some children in these categories have diseases which are not amenable to treatment but which have a well-recognized heritable pattern and for their families one can offer, at least, genetic counselling.

In recent years tremendous strides have been made in the diagnosis and treatment of children with inborn metabolic errors and we are also beginning to recognize diseases caused by infectious agents which find their expression weeks, months or even years after initial infection including such conditions as rubella, toxoplasmosis and subacute sclerosing, panencephalitis, the latter due to measles infection as long as nine or ten years previously.

An ever-increasing group of children with learning disorders and disturbances of speech mechanisms with defects of appreciation or formulation of symbols including dyslexia are becoming recognized. These children are coming for diagnosis increasingly early before devastating psychological handicaps supervene and who after exclusion of serious, and potentially remediable, underlying brain lesions are referred on for specialized educational endeavors.

Some of the symptoms which lead to referral to the program include convulsive seizures as before described, increasing or incapacitating headaches, evidence of raised intracranial pressure, tremors, clumsiness, unsteadiness and other abnormal movements, flaccid or spastic paralysis, loss of

sensation, "floppy" infants, diseases presenting with muscle wasting, sudden or progressive loss of vision of one or both eyes, abnormalities of skull size or shape, defects of spinal fusion and progressive spinal deformities, skin lesions with associated neurological symptoms and disorders of speech and reading.

Apart from the diagnostic and service functions of the Program, education in diseases of the nervous system is an important aspect and physicians, nurses, psychologists and social workers are always invited to participate in the clinic functions in any of the Master Clinics or field clinics.

The aims of the program are ambitious but the hundreds of children salvaged from the scrap heap of despair and adopted into the family of man have justified these aims.

Pedestrian Fatalities Continue to Increase

More than 9,000 pedestrians die from motor vehicle accidents in the United States each year. In 1966, the latest year for which official figures are available, pedestrian fatalities reached nearly 9,300. The number of such fatalities has increased by a fifth since 1958, when 7,641 lives were lost. Preliminary data indicate that the 1966 figure was equalled in 1967 and exceeded in 1968. The higher toll is in part accounted for by the growth in population.

During the period under review, every age group except the elderly experienced an increase in the death rate from traffic accidents. The largest rise occurred in the age range 15-44 among both sexes. Among males, the rate was higher by a third at ages 20-24 and by more than a half at the teen ages; among females, the rise was even sharper. At ages 25-44 the pedestrian death rate increased by about a third in each sex, while at ages 45-64 the rate showed little change. Among persons 65 and over the rate of pedestrian fatalities actually decreased.

Nevertheless, the elderly continue to experience the highest pedestrian fatality rates. In 1966 men 75 years or older recorded pedestrian fatalities of 31.2 per 100,000—twice the rate at ages 65-74 and about 5 times the rate at all ages. Among women the rates were 9.3 per 100,000 at ages 75 and over, 5.8 at 65-74, and 2.6 for all ages. Pedestrian death rates are also high among those 45-64 and among children under 10 years of age. By contrast, they are consistently lowest in the 10-44 age range in both sexes. The risk of fatal pedestrian accidents is appreciably greater among males than among females in every age group, with the sex differential most pronounced among the elderly.

Autumn and early winter are the most hazardous seasons of the year for pedestrians. Approximately 800 are killed in traffic accidents each October and November; more than 900 lose their lives in December, the peak month.

According to data compiled by the National Safety Council, pedestrians are most often killed while entering or crossing the road between intersections. A considerable number of others are fatally injured by motor vehicles while standing or playing in roadways, or stepping out from behind parked cars. The mounting numbers of pedestrian fatalities indicate the need for continuing safety education for all age groups, but especially among the very young and the elderly, who are subject to the greatest risk.

(Metropolitan Life Insurance Company, Statistical Bulletin, August 1969)

Mental Health . . . .

HIRAM W. DAVIS, M.D.

Mental Hygiene Clinics in Virginia

The following list of mental hygiene clinics are operated as state agencies under the State Hospital Board by authority of Section 37.1-23 Virginia Code. They are financed by co-mingled State, Federal and local funds, plus other minor sources of revenue. A small part of the financial operation is defrayed by the collection of fees from patients who can afford to pay. Referrals are accepted from physicians, schools, courts, public health nurses, social agencies and others. They may also be "self referred."

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John A. Knapp, M.D., Director
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Mr. Ronald E. Harrington, Acting Director
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249 Midway Street
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Diagnostic Laboratory Medicine....

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Etiology and Laboratory Diagnosis of Infectious Mononucleosis: II. Cytomegalovirus (CMV) Mononucleosis

The clinical manifestation following infection of humans with the cytomegalovirus (CMV) varies with the age groups affected. Congenital infection may result in death of the fetus in utero, or may be responsible for the clinical syndrome of cytomegalic inclusion disease (CID). However, congenital infection in the absence of clinical symptoms has also been reported. Postmortem studies of infants older than three months whose death has been caused by various diseases revealed 8 to 32 per cent having morphologic evidence of CMV infection in the salivary glands suggesting postnatal acquisition of the virus; transmission through mother's milk has been considered. In the general population, serologic evidence of infection becomes increasingly prevalent with age. CMV complement fixing (CF) antibody has been detected in the sera of 33 to 75 per cent of newborns. This incidence declines to 29 per cent during the first year and then rises progressively from 51 to 81 per cent in the age group over 35. In many virus infections the CF antibody response is transient, while neutralizing antibodies persist for many years. However, in CMV as with other herpesviruses, CF antibodies persist for life, and can therefore be used for an epidemiological survey of past infection.

Recent evidence suggests that acquired CMV in children may produce subacute or chronic hepatitis, interstitial pneumonitis or acquired hemolytic anemia. Patients with malignancies or with immunologic defects, or those undergoing immunosuppressive therapy for organ transplantation may develop CMV pneumonitis or hepatitis and occasionally generalized disease; the relative importance of primary infection versus reactivation of a latent infection in such cases remains to be firmly established.

Worldwide reports indicate an association between CMV infection and a syndrome resembling infectious mononucleosis (IM), but without heterophile antibody, which occurs either spontaneously in adults or in children and adults after transfusion of fresh blood for open heart surgery. The term "cytomegalovirus mononucleosis" has been suggested for this syndrome consisting mainly of fever, splenomegaly and hematological features of IM. Kääriäinen and co-workers in Finland provided the first evidence of a specific virus agent in patients with post-transfusion mononucleosis (PTM) by demonstrating on the basis of their serological data that several had experienced a concurrent CMV infection. As reported in the literature, the incidence of this syndrome varies from 3 to 11 per cent of patients undergoing open-heart surgery. It was shown in many cases that a primary infection had taken place because significant titers of CF antibodies and virus isolation resulted after surgery, but no antibodies and negative virus cultures were obtained preoperatively. These findings can be confirmed even further if IgM antibodies are detectable by the indirect immunofluorescent technique recently reported by Hanshaw and associates.

The percentage of the general population infected with CMV on the basis of significant CF antibody titers may vary de-

pending on the geographic area being surveyed. In order to determine the incidence in the Richmond area a study, including CF and FA procedures as well as virus isolation, is in progress at the Virus Laboratory of the Medical College of Virginia (MCV) utilizing blood donor volunteers. Virus isolation and serological studies on patients undergoing open-heart surgery are also being carried out.

Preliminary results on the prevalence of CMV CF antibody among blood donor volunteers at MCV, according to age groups, are shown in Table I with 18.3 per cent (137 patients) reactivity. It is interesting that a similar report of Hanshaw (1966) in

Table I

Prevalence of Cytomegalovirus Complement Fixing Antibody at the Medical College of Virginia

Age group in years	No. tested	No. positive	Per cent positive
15-20	4	1	25.0
21-25	11	2	18.2
26-30	16	2	12.5
31-35	24	2	8.3
36-40	27	4	15.0
41-45	22	4	18.1
46-50	21	6	28.6
51-55	10	4	40.0
56-60	2	0	0.0
	137	25	18.3

Rochester, New York, also revealed that 18.3 per cent out of 587 individuals tested had CMV CF antibody in their sera. The age range in his study was from birth to 40 years; whereas, at MCV the age group was 15-60 years. Two out of eight open-heart surgery patients or 22.2 per cent at MCV had CMV CF antibody. This finding is significantly higher than the 3-11 per cent incidence reported in other studies. It is not yet clearly established whether more than one serotype of CMV exists. A certain degree of heterogeneity has been suggested from neutralization or CF tests on sera of infants with CID, in that sera of individual infants had higher reactivity to the homologous virus which they excreted than to the heterologous strains. However, sera of older children or adults cannot discriminate between CF antigens of the different human strains. The CF antigen of AD169, the most widely used strain, appears to be more broadly reactive than antigens of the older CMV strains and is the one employed here and in most of the other studies. On the basis of results with sera of prenatally-infected infants, CMV strains have tentatively been classified into two subtypes represented by the Davis and AD169 strains with strains Kerr and Espaillat possibly forming a third subtype.

In summary, recent evidence indicates that the infectious mononucleosis (IM) syndrome may at least be etiologically related to two common viruses of the Herpes group: the Epstein-Barr virus (EBV) and the cytomegalovirus (CMV) with heterophile antibodies being either present or absent, respectively. Relatively simple procedures for serological confirmation of the clinical diagnosis of IM have been discussed.

Division of Clinical Pathology
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A small fraction of the hormonal agents in oral contraceptive pills has been identified in the milk of mothers receiving these drugs. The long-range effect on the nursing infant cannot be determined at this time.

Actions—Ovulen acts to prevent ovulation by inhibiting the output of gonadotropins from the pituitary gland. Ovulen depresses the output of both the follicle-stimulating hormone (FSH) and the lutenizing hormone (LH).

Special note: Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Ovulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis and pulmonary embolism and the use of oral contraceptives. There have been three principal studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll[3] was about sevenfold, while Sartwell and associates in the United States found relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable. Retrospective studies in Great Britain have shown a statistically significant association between cerebral thrombosis and embolism and the use of oral contraceptives. This has not been confirmed in the United States.



Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen. Therefore, if such tests are abnormal in a patient taking Ovulen, it is recommended that they be repeated after the drug has been withdrawn for 2 months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted. anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: Increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

1. Royal College of General Practitioners: Oral Contraception and Thromboembolic Disease, J. Coll. Gen. Pract. *13*:267-279 (May) 1967.
2. Inman, W. H. W., and Vessey, M. P.: Investigation of Deaths from Pulmonary, Coronary, and Cerebral Thrombosis and Embolism in Women of Child-Bearing Age, Brit. Med. J. 2:193-199 (April 27) 1968.
3. Vessey, M. P., and Doll, R.: Investigation of Relation Between Use of Oral Contraceptives and Thromboembolic Disease. A Further Report, Brit. Med. J. 2:651-657 (June 14) 1969.
4. American Journal of Epidemiology (to be published).

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The Medical Society of Virginia . . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was held on Wednesday, December 10, at Society headquarters.

Members Present: Dr. William Grossmann, Dr. James M. Moss, Dr. F. Ashton Carmines, Dr. Dennis P. McCarty, Dr. Thomas S. Edwards, Dr. Raymond S. Brown, Dr. William S. Hotchkiss, Dr. William R. Hill, Dr. George J. Carroll, Dr. John A. Martin, Dr. James C. Respess, Jr., W. D. Liddle, Jr., Dr. Carl E. Stark, and Dr. Carl P. Parker, Jr.

Others Present: Dr. Arthur A. Kirk, Third Vice-President; Dr. William J. Hagood, Jr., Vice-Speaker; Dr. Alexander McCausland, AMA Delegate; Dr. Hiram W. Davis, Commissioner, Department of Mental Hygiene and Hospitals; Dr. Kenneth R. Crispell, Dean, University of Virginia School of Medicine; Dr. Kinloch Nelson, Dean, Medical College of Virginia; Mr. William R. Miller, Attorney; and Mr. Chad P. Combs, Department of Field Service, American Medical Association.

Family Life and Sex Education

The Medical Society of Virginia had been requested to endorse the efforts of a newly formed organization known as the Citizens Information Committee on Family Life and Sex Education. The Committee is headed by Dr. William Thurman, Charlottesville, and is primarily interested in promoting the teaching of family life and sex education in Virginia's public schools.

Mrs. Hamilton Crockford, Richmond, discussed the Committee and stated that it needed all possible support—particularly since the opposition was so well organized.

Dr. Robert Shull, representing Dr. Thurman, stated that physicians at the University of Virginia have seen first hand what can happen through lack of education and expressed the feeling that The Medical Society of Virginia should take a more positive stand on the subject.

Further discussion centered about the material to be used in the schools and Council was assured that all of it had the approval of Dr. Thurman.

Dr. Hotchkiss moved that Council reaffirm its action of September, 1968, and support the activities of the Citizens Information Committee. The motion was seconded.

It was explained that Council had, on September 15, 1968, voted to support sex education in Virginia's schools provided such programs are well planned and properly presented.

Dr. Stark moved to amend the motion by Dr. Hotchkiss in such manner as to assure that "adequate liaison would be maintained between The Medical Society of Virginia and the Citizens Information Committee. *The amendment was seconded and carried. The motion by Dr. Hotchkiss was then adopted as amended.*

Parkinson's Disease

The Division of Neurology at the Medical College of Virginia has undertaken a project having to do with the clinical application of L-DOPA in the treatment of Parkinson's disease. In order to accomplish its objectives, it is necessary that physicians over the State cooperate by helping provide patients for this new preparation.

Dr. Cary Suter, Richmond, stated that a special letter has been drafted for Virginia physicians and expressed the hope that Council would give its approval. The letter will provide full details—including cost to the patient and investigative protocol to be followed.

It was moved by Dr. Brown that the proposed letter be approved. The motion was seconded.

There followed some discussion during which it was agreed that the same approval would be made available to the University of Virginia School of Medicine should it undertake a similar project in the future. *Dr. Brown's motion was then adopted.*

It was pointed out that certain precautions should be taken to insure an understanding of what is involved and eliminate criticism. It was recommended that a special citizens selection committee be given careful consideration.

Old Dominion Medical Society

Dr. Grossman stated that the question of Negro membership in The Medical Society of Virginia continues to arise from time to time and many people are not aware of the fact that the Society has accepted Negro members since 1954. Interested par-

ties have suggested that the misunderstanding might well be cleared up if Dr. Grossmann would meet with the President of the Old Dominion Medical Society and express interest in having all Virginia physicians united under one banner. The thought was expressed that medicine would benefit greatly by having one organization speak for all physicians.

At the present time there are approximately 155-165 Negro physicians practicing in Virginia and 56 of them are members of The Medical Society of Virginia. The thought was expressed that a special letter should be directed to the Old Dominion Medical Society and all specialty groups, inviting their members to join The Medical Society of Virginia and thereby assist in developing a strong and effective voice for medicine in Virginia.

Dr. Grossmann indicated that he would definitely be guided by the thoughts and suggestions received and would keep Council advised of all developments.

Meeting with Congressional Delegation

A special committee, headed by Dr. Thomas W. Murrell, Jr., is making arrangements for a meeting in Washington with members of Virginia's Congressional delegation. It was Dr. Murrell's plan to discuss with the delegation problems and issues of vital concern to our medical schools, public health agencies and the private sector of medicine. It is hoped that the meeting can be held during the latter part of January but the actual date has not yet been determined.

A question was raised as to whether the entire Council should attend the meeting or whether attendance should be restricted to those who would lead the discussion. The thought was expressed that members of Congress are usually anxious to know just how their own constituents feel about matters. It was also suggested that some thought be given to possibly inviting the various Administrative Assistants.

Mr. Combs reported that the AMA Washington office has recently moved into new and more spacious facilities. He stated that the facilities were available for such meetings.

It was generally agreed that the meeting in question would not replace the annual spring luncheon.

Disadvantaged Students

Dr. Grossmann reported on a recent meeting at the Medical College of Virginia having to do with the shortage of Negro physicians. The meeting also concerned itself with the shortage of Negroes in all health professions. During that meeting a question had been raised as to whether The Medical Society of Virginia would be willing to assist in developing a program designed to attract disadvantaged students. Mention was made of the fact that Yale, Harvard, and several other schools have programs of this kind in operation and are meeting with some success.

Dr. Grossmann assured Council that leaders in the movement are not interested in interfering with present admission standards. Rather, they wish to find ways and means of bringing Negro students—and other disadvantaged—to an acceptable scholastic level.

Dr. Crispell discussed the admission screening program for disadvantaged students recently developed at the University of Virginia. Dr. Nelson stated that the Medical College of Virginia is also exploring methods of reaching this particular group.

Council was told that programs for the disadvantaged must have substantial financial assistance. Medical schools are being handicapped in their efforts to increase the size of their classes by a shortage of funds to be used for teachers' salaries.

Dr. McCarty then moved that The Medical Society of Virginia strongly support the University of Virginia screening program for disadvantaged students as presented by Dr. Crispell and that under consideration at the Medical College of Virginia. *The motion was seconded and carried.*

Membership for Medical Students

In keeping with the movement to work as closely as possible with medical students and their organizations, some state societies have arranged to make membership available to these students. For example, Colorado has chartered a component society composed entirely of medical students. This society enjoys the same privileges as any other, including the right to send delegates with full voting privileges to meetings of the House of Delegates.

Dr. Grossmann indicated that students are quite sincere in their desire to have a voice in planning for the future of medicine. They are not interested in token representation.

Dr. Liddle moved that consideration be given to amending the By-Laws in such manner as to permit one delegate and one alternate from each medical school—such delegates and alternates to be elected by third and four year medical students at the schools concerned. The motion was seconded.

Following considerable discussion, a substitute motion was offered by Dr. Stark referring the matter to the Judicial Committee for study and recommendations. The motion carried with it the understanding that the Committee would report its recommendations to Council as soon as possible. *The motion was seconded and adopted.*

Medicaid Billing

Immediately following the Annual Meeting, a special committee was appointed by Dr. Grossmann to study the overall situation with reference to Medicaid billing and endeavor to develop a set of recommendations acceptable to all concerned. The committee was headed by Dr. Leonard Weyl who reported the results of its deliberations to Council.

Dr. Weyl stated the committee had met twice—one of the meetings being a joint affair with a special subcommittee of the Governor's Advisory Committee on Medicaid. He presented the following three committee recommendations:

1. *Coding:*

   It is recommended that consideration be given to devising a claim form to be used by all computerized programs which would permit physicians to either employ the proper numerical code or submit a written description of the service provided.

2. *Interval Billing:*

   It is recommended that physicians be permitted to bill at specific intervals should they so desire. The intervals, however, would not be permitted to exceed three months.

3. *Freedom of Choice in Billing:*

   It is recommended that Virginia physicians cooperate with Medicaid officials by complying with the present law which only provides for direct payment to the physician. The Committee wished it made clear that its recommendation was meant to apply only where the medically indigent are concerned.

   It is also recommended that Council explore further the advisability of seeking an amendment to the present law governing Medicaid which would provide for billing procedures similar to those currently in use under Medicare.

Dr. Weyl expressed the hope that the Governor's Advisory Committee would look favorably upon the recommendations.

Dr. Stark moved that the committee's report be accepted and its recommendations carried out. *The motion was seconded and adopted.*

Third Medical School

The possibility of establishing a third medical school in Virginia has received a great deal of attention in recent years. As a result of this interest, a number of members have expressed the opinion that The Medical Society of Virginia should take a position on the matter.

Dr. Hotchkiss moved that The Medical Society of Virginia take a firm stand in support of a third medical school in the Norfolk area. *The motion was seconded and adopted.*

Annual Meetings

It is becoming more and more difficult to obtain suitable dates for the Annual Meeting and, consequently, Council was requested to determine dates and locations for meetings in 1973 and 1975. It was noted that invitations had been received from Norfolk, Richmond and Roanoke.

Dr. Stark moved that the Society hold its Annual Meeting in Norfolk in 1973 and Roanoke in 1975. It was directed that suitable dates be sought for the meeting in Norfolk, and that October 23-26 be approved for the 1975 meeting in Roanoke. *The motion was seconded and adopted.*

The Secretary was then requested to obtain for future consideration possible dates for meetings in Williamsburg in 1976 and Richmond in 1977.

National Health Insurance

The issue of national health insurance is very much before the Congress at this particular time and a number of proposals will soon be considered. For example, the American Medical Association has developed a voluntary health insurance plan based upon tax credits. The plan bears the label of "Medicredit" and is receiving a great deal of attention from members of the Congress. Other proposals have been submitted by Dr. Durwood Hall, Governor Rockefellow, Walter Reuther, the AFL-CIO, Senator Javits and Congressman Fulton.

Some concern was expressed over the fact that a program of national health insurance at this time could only aggrevate the shortage of health personnel.

Mention was made of the fact that a seven-day hospital week is now being advocated as a partial solution to the problem—as is opposition to first-dollar health insurance coverage.

Dr. McCausland reported that the AMA House of Delegates, during its recent meeting at Denver, had reaffirmed its endorsement of "Medicredit" and urged that the plan be given strong support and wide publicity among members of the AMA and the public. The House also urged that every effort be made to develop other realistic and effective plans of medical care coverage available for all persons in the United States, utilizing multiple methods of financing and free choice of mechanism based on adequate standards of coverage.

A question was raised concerning whether "Medicredit" was economically feasible and Mr. Combs reported that recently conducted studies certainly pointed in that direction.

A motion was then introduced calling for The Medical Society of Virginia, in view of its genuine concern for the medical care of all citizens, to endorse the AMA "Medicredit" proposal as the most desirable plan at this time. The Society would, however, continue to study other possibilities which are voluntary in nature and involve the private sector in their operation. *The motion was seconded and adopted.*

Uniform Anatomical Gift Act

It was recalled that during the 1968 Annual Meeting some dissatisfaction was expressed with existing transplant legislation. Council, at that time, was requested to seek a solution to the problem.

The thought was expressed that the proposed Uniform Anatomical Gift Act provides that solution. It is supported by our medical schools, the Virginia State Bar, the American Medical Association and the National Conference of Commissioners on Uniform State Laws. It provides a model for reform of current legal structure relating to the donation and use of organs and tissue for transplantation and other medical purposes. The Act is said to represent a major step toward resolving many of the existing legal uncertainties while, at the same time, not intruding into those questions which require unhampered medical judgment.

It was reported that the State Bar plans to sponsor the legislation during the upcoming session of the General Assembly and would like the support of The Medical Society of Virginia.

It was then moved by Dr. Moss that the Uniform Anatomical Gift Act be approved as drawn and that the Society support the State Bar in its efforts to obtain enactment. *The motion was seconded and adopted.*

Consumer Affairs

Council was advised that the Society was represented at a recent meeting of various business, trade and professional groups which was called for the purpose of discussing a proposal to establish a Department of Consumer Affairs in the Office of the Governor or Attorney General. Many of those attending the meeting expressed the thought that there exists little need for a separate Department of Consumer Affairs at this time.

It was learned that the Virginia Retail Merchants Association will, in all probability, spearhead efforts to enact legislation which would spell out the duties of a Director of Consumer Affairs and generally regulate the functions of his Department.

The matter was presented only as a matter of information and no action by Council requested.

Liaison Committee to State Board of Medical Examiners

A special committee was appointed in early 1969 to meet with Dr. Cox and representatives of the State Board of Medical Examiners. The committee, headed by Dr. William S. Hotchkiss, was appointed for the purpose of developing a close and effective working relationship between the Society and the Board and exploring ways of being of more assistance where matters of discipline are concerned.

Dr. Hotchkiss reported that the committee had met with representatives of the Board and that agreement was reached on a number of matters. Out of the meeting came the following thoughts concerning action needs:

1. All physicians through their State society, local societies, hospital staffs need to be better informed of the services which the State Board of Medical Examiners is prepared to carry out for the physicians to improve medical care for the citizens of our State. Particular attention might be focused on the investigative services of the State Board which are available. The Committee suggests that a lawyer who has made himself thoroughly familiar with the work of the State Board should be on the program of a State Society meeting in the future.

2. The State Board of Medical Examiners needs to be notified of any action at a local level which results in the expulsion of a doctor from a medical society or hospital staff.

3. The State Board of Medical Examiners needs to be informed directly by the local medical society of any suspected improper practice of a physician in its area who is not a member of the local or State society.

4. The State Board of Medical Examiners needs to be notified of the conviction of a physician of a misdemeanor which might be constituted as "moral turpitude".

5. The local medical societies need to be informed by the State Board of Medical Examiners of its consideration of any physician who is applying for relicensure after his license has been previously revoked for any reason.

6. Consideration should be given to attempts to effect changes in the Code so that chiropractors would not be licensed in the State in the future. Several powerful groups including H.E.W. have withdrawn endorsement of this cult.

It was agreed that Virginia has the best and most cooperative Board of Medical Examiners anywhere and every effort should be made to keep the lines of communication open between the Board and the Society. It was noted that the President and President-Elect had met with the Board on December 8, 1969 —a practice which is expected to be continued in the future.

There followed some discussion concerning physicians' assistants and what the future holds as far as licensing, etc. are concerned. There are no plans for licensing at this time.

It was then moved that the report of Dr. Hotchkiss' committee be sent to each component medical society as a matter of information. *The motion was seconded and adopted.*

Adoptions

It was recalled that, during an earlier meeting of Council, a question involving adoptions had been referred back to the Child Health Committee for further consideration. It had been the Committee's recommendation that all adoptions be processed through accredited adoption agencies. Some doubt had been expressed by Council that this was always good policy.

In keeping with Council's request, the Child Health Committee reconsidered the matter and reaffirmed its feeling that the child and prospective parents are better protected if the adoption is processed through an accredited agency. It recognized the fact that there are exceptions to every rule but that the procedure recommended seemed generally more acceptable.

Some members of Council stated that, in their experience, many of the happiest adoptions have been handled directly through physicians and have not involved the Welfare Department.

It was then moved that the matter be tabled. *The motion was seconded and adopted.*

AMA Membership

Council was advised that The Medical Society of Virginia, with a total membership of 3,609, can point only to 2,250 AMA members. This is not a very good record and the Society could conceivably lose one of its AMA Delegates by falling below the 2,000 mark.

Dr. Grossmann indicated that every effort will be made to increase AMA membership. Special articles will be prepared for the Virginia Medical Monthly and component societies will be encouraged to present programs on AMA.

Special brochures covering the advantages of AMA membership have been received and will be sent to all members of the Society.

Rehabilitation

The Department of Vocational Rehabilitation has expressed concern with reference to payments made for services actually performed by residents and assistant residents in some hospitals. Dr. McCausland, Chairman of the Society's Rehabilitation Committee, stated that the Department is anxious to cooperate in every possible manner and is only interested in finding a solution which will be acceptable to all parties.

Mr. Edward Justis, Assistant Commissioner of Vocational Rehabilitation, stated that the policy of paying for such services has met with some opposition in several areas of the State and that medical consultants are reluctant to suggest fees when the actual surgery is performed by a resident or assistant resident. It was learned that the original plan to make payments to various Departments at the University of Virginia for specific services had been worked out some years ago. However, the implementation of Federally supported programs has,

among other things, made it necessary to review the overall situation.

It was brought out that medical schools do have a special mission and, consequently, their methods of providing services are often unique. For example, the "team concept" is looked upon with favor and considered by many to be quite necessary.

It was recalled that Council has, over the years, considered the problem as it relates to Blue Shield. On several occasions it has recommended that Blue Shield contracts not be amended in such manner as to pay for services provided by interns and residents.

It was agreed that the whole problem should be reviewed in an effort to remove the uncertainty which exists at this time. It was moved by Dr. Respess that the matter be referred to a special committee for thorough study. The committee would make its findings and recommendations known to Council at the earliest practicable time. *The motion was seconded and carried.*

Rubella Vaccine

The Society has been requested by the State Department of Health to endorse a rubella vaccine and educational campaign which will be sponsored jointly by the Department and National Foundation (March of Dimes). It was reported that the Chairman of the Committee on Child Health had been contacted and his support of the proposed campaign obtained.

The thought was expressed that this is truly a public health problem and that approval of rubella vaccine clinics should be given only in those instances where no cost is involved to the recipients.

Dr. Liddle then moved that the Society support such clinics as long as there is no expense to the patient. The motion was seconded.

A proposed amendment to eliminate any reference to expense was lost.

The motion by Dr. Liddle was then adopted.

Solo Practitioners

The House of Delegates, during the Annual Meeting at Virginia Beach, had instructed the Legislative Committee to seek enactment of legislation which would permit the incorporation of solo practitioners of medicine. The feeling was expressed that the word "incorporation" is unfortunate since the corporate practice of medicine is forbidden in Virginia. At the present time, however, Virginia law does permit three or more physicians to form professional associations. Such associations enjoy many of the benefits of corporations.

Dr. Grossmann stated that the Virginia Association of Professions is very much interested in legislation of this kind and has appointed a special committee to prepare the necessary Bill and arrange for its introduction in the General Assembly. The Medical Society of Virginia has been asked to cooperate.

Dr. Grossmann asked Dr. Hill to represent the Society on the special committee of the Virginia Association of Professions. It was then moved that the Society cooperate in the preparation and support of suitable legislation. *The motion was seconded and adopted.*

VaMPAC

Council was advised that VaMPAC wished to have two members of the Woman's Auxiliary appointed to its Board of Directors and the names of Mrs. F. Clyde Bedsaul and Mrs. Robert D. Keeling were placed in nomination. *Both Mrs. Bedsaul and Mrs. Keeling were unanimously elected.*

Committee on Radiology

The Bureau of Industrial Hygiene of the State Department of Health believes that it would be well for the Society to appoint a Committee on Radiology. It seems that physicians are not too well informed on that portion of the Virginia Code having to do with registration of x-ray equipment. The Department of Health is most anxious for all physicians to be knowledgeable and in complete accord with all aspects of the law.

A motion which would have the President appoint a special Committee on Radiology was seconded and adopted.

150th Anniversary

Attention was called to the fact that 1970 will mark the 150th Anniversary of the founding of The Medical Society of Virginia. It was agreed that some official notice should be taken of the event and it was moved that the President appoint a special committee to recommend suitable observance of the occasion. *The motion was seconded and adopted.*

Sales Tax on Drugs

Although the Committee on Pharmacy had recommended that serious consideration be given to seeking legislation which would eliminate any sales tax on drugs either prescribed or dispensed by a physician, the general consensus seemed to be that it might be best to adopt a "wait and see" attitude at this time. A new Tax Commissioner will soon take

office and it is hoped that his interpretation of existing statutes will coincide with their intent. The Medical Society of Virginia has always been of the opinion that the law as written specifically exempts those drugs either prescribed or dispensed by a physician.

Tumor Registry

Council was advised that a Tumor Registry has been proposed under the Virginia Regional Medical Program (Heart, Cancer, Stroke). The Department of Health will soon eliminate its own Registry program and the VRMP proposal apparently has a great deal to recommend it. Plans call for the program to initially be carried on with the cooperation of six hospitals. The number of participating hospitals would be increased as the program progressed.

Dr. Grossmann stated that he had placed the matter on the agenda primarily for information purposes —particularly since The Medical Society of Virginia has been requested to lend its name as a sponsor.

Meetings with Legislators

Council learned that a number of meetings have either been held, or will soon be held, with members of the General Assembly from the various Districts. A checklist of items for discussion with members of the General Assembly is available from the State Office.

"Exempt Narcotics"

During its meeting of September 14, Council requested the Committee on Pharmacy to further consider a resolution (sponsored by the Norfolk County Medical Society) which would request the State Board of Pharmacy to exercise its authority and restrict the sale of all "exempt narcotics" to those purchased on prescription from duly licensed health practitioners.

The Chairman of the Pharmacy Committee has reported that the Virginia Pharmaceutical Association, acting in cooperation with the Food and Drug Administration, is asking pharmacists not to sell "exempt narcotics" to any purchasers under 18 years of age or whom they consider of questionable character. This procedure will be tested from six months to a year and, if not effective, prescriptions will quite probably be required.

Future Meetings of Council

Dr. Grossmann reported that, from all indications, it would probably be necessary for Council to meet more often than in previous years. It was proposed that the next meeting be held around the latter part of January and the date of January 21 was selected.

There being no further business, the meeting was adjourned.

Robert I. Howard, *Secretary*

APPROVED:
William Grossmann, M.D., President

New Computerized System for Blue Cross-Blue Shield.

A unique new computerized system designed to speed and control the payment of medical bills for physicians has been developed by Blue Cross and Blue Shield, Richmond, and Western Data Products, Los Angeles.

A doctor may electronically transmit a claim for services using a keyboard type terminal device in his office. The information will be transmitted into the Blue Cross and Blue Shield data center. Verification of the claim will be returned to the doctor within seconds through an automated voice response. The claim will be processed and a check issued to the physician. The system will virtually eliminate the need for paper work in the doctor's office.

The new units will be installed in physicians' offices during the coming year.

Correspondence . . . .

Relief of Pain in Sinusitis.

To the Editor:

In the Journal of the American Medical Association, vol. 119, p. 1066, July 25, 1942, I have stated that an incipient cold can be relieved by the use of iodoform powder. Since that time I have had countless occasions to try this method out on myself and also on others. In the very beginning of a cold the cold could be aborted; when the initial stage has passed, the cold could be slightly improved—could not however be aborted. In a hypertrophic rhinitis with a hypertrophy of the turbinates the sinuses give a lot of trouble. Sinus pain is usually unbearable and cannot be easily relieved. I have soon found out that the sinus pain can be completely relieved by the use of the iodoform powder as a snuff. In most cases the pain relieving action of iodoform is immediate, and the sinus pain stops without return. No pain tablets have to be taken and in most of the cases a return of sinus pain has not occurred.

Leo I. Hallay, M.D.

Fort Blackmore, Virginia 24250

A Transfusion Reaction.

To have a transfusion reaction is unusual. To have an inter-donor transfusion reaction is a rarity. To have an inter-donor inter-ethnic transfusion reaction is to be recorded. This case represents such an event.

Case report—from Transfusion 3, 1963, page 38; patient a Negro.

> "A hemolytic transfusion reaction due to inter-donor incompatibility is reported. In a Kell negative recipient without irregular antibodies, Kell positive erythrocytes from one transfusion reacted with high titered anti-Kell antibodies present in a unit of blood transfused subsequently. It was possible to demonstrate in vitro sensitization of mixed populations of Kell positive and Kell negative red cells exposed to antibody dilutions analogous to those in the patient."

It is evident, as the Kell blood group primarily occurs in whites,[1] that an occasional individual will be harmed by the inter-ethnic use of blood for transfusion. In this country the Negro is primarily a recipient of white donor blood; therefore, inter-ethnic transfusion reactions will primarily occur in the Negro.

Martel J. Dailey, M.D.

Williamston, North Carolina

1. Giblett, E. Tranfusion 1, 1961, 536.



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Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
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For the patient who has been through an accident, the worry and anxiety following the mishap may actually heighten the perception of pain. This is why there's a classic ¼ grain *sedative* dose of phenobarbital in Phenaphen with Codeine—to take the nervous "edge" off, so the rest of the formula can control the pain more effectively.



Driver Escapes Serious Injury When Truck Jackknifes

SHENANDOAH, JULY 16. Roger Sherman of Waynesboro suffered head lacerations but escaped serious injury when the tractor-trailer he was driving skidded on Deep Run Bridge and jackknifed. It took rescue workers thirty minutes to remove him from the cab which was dangling over the edge of the bridge. Sherman is resting comfortably in University Hospital where his condition is listed as satisfactory.

Frankhouser called my attenti

Phenaphen® with Codeine

Phenaphen with Codeine Nos. 2, 3, or 4 contains: Phenobarbital (¼ gr.), 16.2 mg. (warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg. Phenacetin (3 gr.), 194.0 mg.; Hyoscyamine sulfate, 0.031 mg. Codeine Phosphate, ¼ gr. (No. 2), ½ gr. (No. 3), or 1 gr. (No. 4) (warning: may be habit forming).

The compound analgesic that calms instead of caffeinates

Indications: Phenaphen with Codeine provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with all phenacetin-containing products excessive or prolonged use should be avoided. **Side effects:** Side effects are uncommon, although nausea, constipation and drowsiness may occur. **Dosage:** Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule every 3 to 4 hours as needed. For further details see product literature.

A. H. Robins Company, Richmond, Va. 23220 A·H·ROBINS



Woman's Auxiliary....

March 20 Is the Day

. . . to gather forces for the mid-year board meeting in Richmond at The Medical Society of Virginia Headquarters. May Straughan will pound the president's gavel promptly at 10 A.M. to initiate brief oral reports given by the county presidents and State chairman.

Our Nation Is Growing and Growing and Growing

. . . which brings to light the necessity for expanding health programs and *recruitment* of the personnel to carry them out. Health care encompasses not only the acutely ill and those suffering from injury, but also preventive medicine and care of those suffering long term illness. Mrs. Wendell Roller, national health careers chairman, says "We must seek community support for action programs to increase the number of workers in more than 200 health-related occupations. By 1975 health will be our nation's largest industry."

Can We Help?

Certainly . . . by acquainting students with the training resources available, in order to find the program where he can best develop his interests, aptitudes, and abilities. Auxiliaries can provide high school guidance counselors with copies of "Essentials of an Acceptable School" (approved by the AMA and prepared by the Council on Medical Education in collaboration with other professional groups), lists of approved schools (available from the AMA Department of Allied Medical Professions and Services) and a "Guidance Counselor Fact Sheet on Accreditation of Educational Programs for Selected Allied Health Occupations" (also may be procured from the AMA Department of Allied Medical Professions and Services).

Auxiliaries can help influence the decision-makers to establish the necessary new curricula and on-the-job training in health careers in newly established junior colleges.

Health Career Days, hospital tours, sponsorship of health career clubs, guidance counselor workshops and cooperation with other community agencies concerned with paramedical personnel recruitment will continue to be basic in the auxiliaries health career program.

Mrs. Michael Puzak, health careers chairman, stated, "In the State of Virginia we are fortunate to have the Virginia Council on Health and Medical Care in Richmond, which has served as a model for many other councils in the United States. They have two health career directors who tour the State to interest youth from high schools and junior high schools in health careers. The youth really identify with these men and many have become interested in the health fields. If you would care to receive information write the Virginia Council on Health and Medical Care, 100 East Franklin Street, Richmond, Virginia 23219."

All the World Is Our Neighbor

. . . with stepped up communications and travel. Biafras and Vietnams are as far as the nearest airport. "We are not suggesting members journey to these distant lands, but rather sponsor worthwhile projects within the framework of your international health committee", commented Mrs. William Bishop, international health chairman such as:

1. Sponsoring "International Day" open to your community . . . complete with costumes and foods from foreign lands. Lead others to become *involved:* films, booths,

displays of pick-up materials. The physician who has served overseas could be engaged as your speaker.

2. Welcome foreign medical personnel visiting your area to your homes to share a bit in your family life, introduce them to your friends and exchange ideas for better international health.

3. Encourage a "Wife to Wife Program" to complement the "Doctor to Doctor Program". This is to inform other doctor's wives about our activities in America. Send her your copy of *MD's Wife,* your husbands medical journals and so on. For information write Ada Chree Reid, M.D., chairman, Doctor to Doctor Program, c/o The World Medical Association, 10 Columbus Circle, Room 1270, New York, N. Y. 10019.

4. Give to support agencies working in missions of healing to needy people overseas. Look into possibilities of working with *Project Hope, Project concern,* and *Care Medico* and many more.

5. Be a *collector*—of "things" no one else wants—that can still be of use where they are badly needed elsewhere. Gather and send medical material to collection agencies for overseas shipment.

6. Employ your auxiliary in their own homes knitting leper bandages, sewing little sheets from worn bigger sheets, johnny coats from old shirts, layettes, toys for children, etc.

Any county auxiliary with the approval of their medical society may collect physicians pharmaceutical samples for distribution overseas. The auxiliary must only accept full responsibility for complying with shipping regulations for collection, packing and shipping.

Would You Believe

. . . the auxiliary in Fairfax County has an active ski group which heads for the slopes on Wednesdays after the children depart for their portals of learning and arrive home by the time they return. It is a great day of fun and exercise and a great way to slip in a practice session. The only requirements are good weather and ski conditions. Enthusiasm runs high and injuries —low!

Is There a Mental Problem?

One person in *ten* (460,000 people in the State of Virginia) will have some form of mental or emotional illness. One-third of the hospital beds in Virginia are in mental hospitals. Over 7,000 Virginians were admitted between June 1967 and June 1968. The number of hospital admissions constantly rises in Virginia, while the national trend is toward fewer patients. More statistics? *One* out of every *five* families has either someone in a mental hospital or someone recently returned from a mental hospital or someone destined to enter a mental hospital. Approximately ten per cent of our *children* are sufficiently emotionally disturbed to require help.

Mrs. Walter Laude, mental health chairman, emphasized the belief that good mental health begins in childhood and a sound program of prevention will contribute to family solidarity. The family is society's bulwark for its members mental health by talking things over, identifying problems which arise and realizing needs common to all of us. Isabelle Laude would like the auxiliaries to consider a series of workshops in parent education. This enables parents to talk over common worries that beset parents and develop a code of behavior acceptable to parent and child for the benefit of the family and the nation.

Editorial . . . .

Membership in the American Medical Association

IN A RECENT ISSUE of the Journal of the American Medical Association it was noted that there were approximately 5000 licensed physicians in the State of Virginia, 3500 members of The Medical Society of Virginia and only 2500 members of the American Medical Association. It is thus apparent that many physicians in the State are not participating in the activities of the American Medical Association, are not being represented in the House of Delegates and are not assuming their fair share of the cost of running the organization. The physician who does not join because he cannot afford the dues is rare indeed. The physician who does not join because he does not fully understand the function of the American Medical Association is all too common. The purpose of the American Medical Association is to promote the science and art of medicine for the betterment of the health of the public. This function is carried out by a staff of 600 with 42 different councils, committees, bureaus, and departments. To review the work of all these units would be very lengthy, but some of the activities should be mentioned.

The Council on Drugs evaluates all new drugs and publishes reports of these in the Journal of the American Medical Association and in the yearly edition of "New Drugs". The reports discuss these drugs in an unbiased manner based upon the most reliable data that is currently available. The Council on Foods and Nutrition makes modern nutritional knowledge available to physicians and the public. The council has been a bulwark of strength against the pressures of the food fadists, the vitamin purveyors and quacks of other types.

Continuing education of the practicing physician is a prime function of the American Medical Association. This is accomplished through the publication of medical journals and the presentation of the annual and clinical meetings of the association. The physicians who attend these meetings and take advantage of the educational opportunities on a regular basis avoid becoming obsolete in their medical practice. The AMA's Council on Medical Education and Hospitals has been the driving force to improve the quality of undergraduate, post-graduate and continuing medical education in America. One-fourth of the members of the Joint Commission on Hospital Accreditation are appointed by the American Medical Association. We all feel the effects of the recommendations

of this commission. These recommendations can be changed by AMA members who are able to convince their delegates that changes should be made.

The Bureau of Medical Economics and the Council on Medical Service work to improve the distribution of physicians and to achieve better utilization of physician services. Many communities now have adequate physician coverage because of the activities of these committees. The American Medical Association helps keep the American public informed of current health knowledge. Speakers, exhibits, films, and transcriptions are provided for this purpose.

The most misunderstood function of the AMA is the Washington office. This small office has the job of reviewing all medical legislation that is introduced in Congress. Last year 1435 separate bills were studied and recommendations made to the appropriate congressional committees. This liaison between the Congress and the Washington office has been developed to the point that Congressmen and Senators are constantly asking for figures, facts, advice and guidance on various problems of medical legislation. Many of the AMA critics have forgotten that the AMA was the important force in the establishment of the Public Health Service, the Food and Drug Administration, Federal Support to Medical Education, Federal Support to Nursing Education, treatment facilities for drug addicts, National Institutes of Health and proper medical care for the indigent. Of the 1435 bills considered by the Washington office last year, the AMA testified 24 times on 15 separate subjects, favoring 10, opposing one and voicing partial support or opposition to the other four. It is obvious that the Washington office is not opposed to legislative progress.

By joining the American Medical Association you will increase your own professional efforts through greater opportunity for continuing education, you will increase the professional efforts of new physicians by assuring that they have had adequate medical school education and adequate hospital training, you will help protect the public from quacks, and you will help protect yourself from useless drugs, you will have a more effective voice in the policy of organized medicine and you will be assuming your fair share of the cost of these activities. When a physician graduates from medical school he automatically assumes an obligation to help train other physicians and to help provide medical care. This obligation can not be effectively fulfilled by physicians who do not join the American Medical Association.

James M. Moss, M.D.

Champagne: The Queen of Wines

Champagne is the name of one of the old French provinces. It is also the name given to the wine made from grapes grown in the former Champagne province. When good, it is certainly better than any other sparkling wine can ever hope to be; it requires greater care, is made with better grapes, of blends of finer and more suitable wines, and is also matured in bottle somewhat longer, or at least that is what the Encylopaedia Britannica said.

MEN DIFFER FROM WOMEN. There are some generally understood anatomical peculiarities that set the sexes apart but there are other equally profound differences that are not so well understood. Women do not appreciate newspaper comics to the same degree that men do. Women cannot tell a joke as well as men, and when they do attempt to embellish a joke, more often than not they only succeed in weakening it. There is another major difference between the sexes and that concerns champagne.

When a couple arrives at a party and is greeted by the popping of bottles the wife's eyes glisten with anticipation while the husband hastily looks around to see if there is another table that has something more palatable upon it. The odds are there isn't, for parties of this type, like the behaviour of the myocardium, usually observe the all-or-none law. As soon as the wraps are off the wife brightly asks her husband if he will get her a glass of champagne but at that moment she invariably discovers an unattached friend who also would like to have a glass so the husband dutifully trots off to the table where all the other husbands have gathered for the same purpose.

While waiting at the bar he has ample opportunity to wonder just who the misanthrope was who designed the glasses that apparently must be used whenever champagne is served. He probably was the same practical joker who tried to foist the spirit level without a top on an unsuspecting public.

With the glasses filled and the return trip begun he will find that his adventures are just beginning. Meanwhile his wife and her friend have separated by mutual consent and neither is where she was when he was dispatched on his mission. While he is guarding the glass in his right hand from a potential blocker bearing down upon him, another running guard will suddenly appear on his blind side and the champagne held in his left

hand will, like Gaul, divide into three parts. Some will fall on the floor where it will be a sticky spot and potential hazard for the rest of the evening. A second part will be impartially distributed over his coat, vest and trousers. The third fraction will disappear up his left sleeve and puddle about his elbow where it will remain until he returns home that evening.

While his attention is diverted to the initial disaster area on the left, the glass in his other hand will take this opportunity to repeat the same process and lose half of its contents. Two alternatives are now open to the erstwhile wine bearer. He may continue to search for the authoresses of his misfortunes and ultimately give them partly filled glasses with his compliments or he may return to the bar and start out anew with a fresh supply and go through the same procedure all over again.

With this duty chore behind him the thought may come to him that champagne is possibly better than nothing at all and perhaps it will not taste as insipid as it did the last time he tried it. He will find that it still hasn't changed but he may proceed on the false premise that if he drinks enough, he will not be aware of the taste. But the flavor will linger on, not only that night, but the next morning as well.

If, by happy chance, the gathering is held in his club and he has a strategically located locker, the evening may not be a total loss. But this rarely is the case so he has but one final alternative. If his wife can be diverted momentarily, he may seek out his host and ask if he doesn't have something stashed away for his male friends in just such an emergency. This will serve as a stop gap, but if on the way home, his wife learns of her husband's delinquencies she will be quick to point out that her hostess will never invite them to her home again. If he is equally quick he may point out that he has no desire to return to that home again and spend another evening drinking champagne.

Perhaps champagne may have its uses in a very limited way. A winning pitcher or quarterback may be identified after a championship game by having had the "bubbly stuff" poured over his head and down his back. It is also useful in christening ships if nothing better is available. But it will be noted that these uses are for purely external purposes—otherwise it should be confined to the birds and to our wonderful wives.

H.J.W.

News ....

Calendar of Events

Annual Postgraduate Program—Sponsored by Medical Staff of Roanoke Memorial Hospital—Roanoke—March 19-20, 1970.

Spring Series of Thursday Afternoon Lectures—University of Virginia School of Medicine—Charlottesville—March 5-April 23, 1970.

Annual Spring Clinic—Louise Obici Memorial Hospital—Suffolk—April 1, 1970.

Cardiac Symposium—Sponsored by Heart Association of Northern Virginia and Washington Heart Association—Marriott Twin Bridges Motor Hotel—Arlington—April 8, 1970.

Swineford Allergy Conference—University of Virginia—Charlottesville—April 10, 1970.

Annual Postgraduate Course—Sponsored by Staff of Gill Memorial Eye, Ear, Nose and Throat Hospital and Clinic—Hotel Roanoke—Roanoke—April 12-15, 1970.

Virginia Society of Anesthesiologists—Annual Spring Symposium—Executive Motor Hotel—Richmond—April 17-19, 1970.

Norfolk General Hospital—Continuing Education Symposium—Recent Advances in Cancer, Infectious Diseases and Endocrinology—Norfolk—April 30-May 1, 1970.

Virginia Society of Ophthalmology and Otolaryngology—Annual Meeting—Williamsburg Lodge—Williamsburg—May 6-9, 1970.

Virginia Academy of General Practice—Annual Scientific Assembly—Hotel Roanoke—Roanoke—May 6-10, 1970.

Annual Seminar on Cancer of Breast—Brown Palace Hotel—Denver, Colorado—May 14-16, 1970.

Cardiac Symposium—Sponsored by Montgomery County Heart Association—Bethesda Country Club—Bethesda, Maryland—May 20, 1970.

International Cancer Conference—Sponsored by International Union Against Cancer—Houston, Texas—May 22-29, 1970.

Child Psychiatry Spring Forum—Medical College of Virginia—Richmond—May 29, 1970.

Seaboard Medical Association—Nags Head, North Carolina—June 18-21, 1970.

American Medical Association—Annual Convention—Chicago—June 21-25, 1970.

Flying Physicians Association—Annual Meeting—Bay Shore Inn—Vancouver, British Columbia—August 23-28, 1970.

American Electroencephalographic Society—Continuing Educational Course on "Current Practice of Clinical Electroencephalography"—Washington, D. C.—September 14-16, 1970.

* * * * * *

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following members were received into The Medical Society of Virginia during the month of January:

Robert Patrick Carroll, Jr., M.D., Covington
William Francis Cavender, M.D., Alexandria
Irving Kenneth Cook, M.D., Waynesboro
Charles Lee Cooke, M.D., Richmond
Howard Ashby Farrar, M.D., Hampton
John Leo Fischetti, M.D., Suffolk
John Smith Greenhalgh, M.D., Dumfries
Gregory James Heyner, M.D., Richmond
Edward W. Hook, M.D., Charlottesville
Charles Emmet Jenkins, M.D., Alexandria
Melchor Pulido Mallare, M.D., Danville
James Packard Mann, M.D., Washington, D. C.
Louis Daniel Parham, Jr., M.D., Montross
John K. Petrakis, M.D., Charlottesville
James Albert Piggott, M.D., Lynchburg
James William Preuss, M.D., Alexandria
George Lester Sheppard, Jr., M.D., Winchester
Joseph Robert Svoboda, M.D., Richmond
Robert Alexander Whisnant, Jr., M.D., Lynchburg

Arlington County Medical Society.

Dr. Arthur I. Sims has been installed as president of this Society for 1970. Other newly elected officers are: Dr. Timothy L. Kelly, Jr., president-elect; Dr. W. Leonard Weyl, vice-president; Dr. John C. Bucur, secretary; Dr. William D. Dolan, treasurer; and Dr. Robert H. Gruver, member-at-large.

Fairfax County Medical Society.

Dr. Donald A. Thorn is president of this Society for 1970, and Dr. Rolf A. Koehler is president-elect. Dr. Alan Mackintosh has been elected vice-president; Dr. William Bekenstein, secretary; and Dr. Nelson Tart, treasurer.

Alexandria Medical Society.

Dr. Thomas L. Lucas has been installed as president and Dr. Bruce L. Gilmore named president-elect. Dr. George F. Miller, Jr., is vice-president; Dr. Roy S. Gillinson, secretary; and Dr. Harold J. Berman, treasurer.

Dr. Salley Plans Retirement Practice.

Dr. W. Callier Salley, who recently retired from practice in Norfolk, and moved to Gloucester Point, has entered a limited practice in internal medicine in Gloucester. He will be in association with Drs. Raymond S. and William B. Brown.

Dr. Stuart Harris, Jr.,

Lynchburg, has completed a two-month tour of service aboard the hospital ship, SS Hope, in Tunisia. He and 150 other doctors, nurses and other paramedical personnel have been working directly with their Tunisian counterparts in classrooms, laboratories and wards aboard the ship and in hospitals, medical clinics and schools on shore.

Dr. John Wyatt Davis, Jr.,

Lynchburg, has been invited to serve on the American Protestant Hospital Association Committee for interviewing candidates for certification as a Chaplain.

Dr. George J. Carroll,

Suffolk, will serve as Chairman of the Council of the Southern Medical Association for the coming year.

Dr. John A. Rawls,

Richmond, is the recipient of the Mechanicsville Jaycees' annual distinguished service award.

Dr. Joseph E. Gardner,

Harrisonburg, has been elected a trustee of the Rockingham Memorial Hospital.

Annual Clinical Conference.

The Louise Obici Memorial Hospital Annual Clinical Conference will be held on April 1st.

The program is as follows: Etiology and Prevention of Automobile Accidents—Dr. William F. Enos, Arlington; Recognition and Treatment of Factors Involved in Atherosclerosis—Dr. W. R. Harlan, Jr., Richmond; Organ Panels: An Innovation in Health Care Delivery—Dr. John Bernard Henry, Syracuse, New York; Common Cold—Dr. Jack L. Gwaltney, Jr., Charlottesville; Law Enforcement of Drug Abuse in Virginia—Mr. Robert F. Horan, Fairfax. Dr. William Grossmann, president of The Medical Society of Virginia, will be the luncheon speaker, his subject being Comprehensive Health Care.

The Annual Louise Obici Memorial Hospital Medical Staff Award for outstanding contributions to the medical profession will be presented to Dr. Mack I. Shanholtz, State Health Commissioner of Virginia.

This Conference has been approved for six hours credit by the Academy of General Practice. All physicians of Virginia are invited to attend.

Seminar on Cancer of the Breast.

The ninth annual Seminar on Cancer of the Breast will be held at the Brown Palace Hotel, Denver, Colorado, May 14-16, 1970.

For further information, contact the chairman of local arrangements, Wendell P. Stampfli, M.D., St. Luke's Hospital, Denver.

Medical and Chirurgical Faculty of Maryland Annual Meeting.

The 172nd Annual Meeting of the Faculty will be held in Baltimore, April 1-3. The Program Committee has arranged an outstanding scientific program with many prominent lecturers, as well as medical and surgical grand rounds.

All physicians are invited to attend these sessions and a copy of the detailed program may be obtained from DeWitt E. DeLawter, M.D., 1211 Cathedral Street, Baltimore, Maryland 21201.

Wanted.

One or two general practitioners, service obligation fulfilled, to join established GP group. Local hospital. Population 20,000. Twenty-three miles from Richmond, Virginia. Drs. Moore and Miller, 815 West Poythress Street, Hopewell, Virginia 23860. Telephone 458-8557. (*Adv.*)

Position Wanted.

Forty-two year old pathologist, certified in A.P. in 1960 and Virginia U.S.A. license seeks position in new private hospital in the East. Morning hours only—9:00 A.M. to 2:00 P.M. Will take postgraduate course in the afternoons. Salary about $1000.00 monthly. Write to M. Ungaro, M.D., Av. V. Larco 377, Trujillo, Peru. (*Adv.*)

Emergency Room Physician Wanted.

Full time emergency room coverage in active emergency room of 191-bed, accredited hospital in the beautiful Shenandoah Valley of Virginia. Guaranteed annual salary $25,000 plus incentive. Contact administrator, King's Daughters' Hospital, Staunton, Virginia 24401. (*Adv.*)

Wanted

Emergency Room Physician, Virginia license necessary. Maximum annual guarantee. Contact James A. Miller, M.D., Winchester Memorial Hospital, South Stewart Street, Winchester, Virginia 22601. Phone (703) 662-4121. (*Adv.*)

Wanted

Internist to associate with an internist or GP in Fairfax, Virginia. Office fully equipped, large suite in Medical Center Building, adjacent to 700-bed hospital. Full or part time physician. Salary and percentage income arrangement. Virginia license required. Give full curriculum information in first letter. M. Nuri Gay, M.D., Boulevard Medical Center, 8301 Arlington Boulevard, Suite 3-2, Fairfax, Virginia 22030. Phone (703) 573-3777. (*Adv.*)

Obituary . . . .

Dr. James R. Gorman,

Lynchburg, died February 1 at the age of seventy-nine. He was a graduate of the Medical College of Virginia in 1914. Dr. Gorman specialized in diseases of the eye, ear, nose and throat and had practiced in Lynchburg from 1919 until his retirement in 1963. He was a past president of the Lynchburg Academy of Medicine and had been a member of The Medical Society of Virginia for fifty-five years.

His wife, three sons and a daughter survive him. Two sons are Drs. John B. Gorman, Lynchburg, and Thomas L. Gorman, Richmond.

Dr. Samuel Beverly Cary,

Roanoke, died February 3. He was seventy-nine years of age and a graduate of the Medical College of Virginia in 1912. Dr. Cary was the first intern at Lewis-Gale Hospital. He later headed the department of urology and was a member of the hospital staff for more than fifty years. He retired from practice in 1962. Dr. Cary served with the British Army during World War I and later with the U. S. Army in France. He was a member of The Medical Society of Virginia, having joined in 1920.

His wife and a daughter survive him.

Dr. George A. Welchons,

Richmond, died January 19 at the age of sixty-eight. He received his medical degree from the Medical College of Virginia in 1936. Dr. Welchons was medical director of the old Pine Camp Hospital from 1938 to 1943, following which he entered private practice, specializing in diseases of the chest. He served as a clinical professor of radiology at the Medical College of Virginia, was attending physician at McGuire VA Hospital and consultant to the State Division of Corrections. Dr. Welchons had been a member of The Medical Society of Virginia for thirty years.

A son and a daughter survive him.

Dr. William M. Gammon,

Bristol, died January 21. He apparently suffered a heart attack while on a rest-vacation trip to New Zealand and died in a hospital there. Dr. Gammon was sixty-nine years of age and received his medical degree from the University of Virginia in 1930. He was a member of the Elks Club and the Bristol Host Lions Club. He had been a member of The Medical Society of Virginia for eighteen years.

His wife and three daughters survive him.



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James W. Pancoast, M.D.
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Plastic Surgery

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Radiology

O. Christian Bredrup, Jr., M.D.
Radiology

Austin I. Dodson, Jr., M.D.
Urology

J. Edward Hill, M.D.
Urology

William T. Stuart, M.D.
Urology

John G. Byers, Jr., M.D.
General Medicine

Clarry C. Trice, M.D.
General Medicine

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William H. Harris, Jr., M.D.
John B. Catlett, M.D.
Robert W. Bedinger, M.D.
Alice Virginia Thorpe, M.D.
David L. Litchfield, M.D.
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Joan B. Hovis, R.N., Dir. of Ed.
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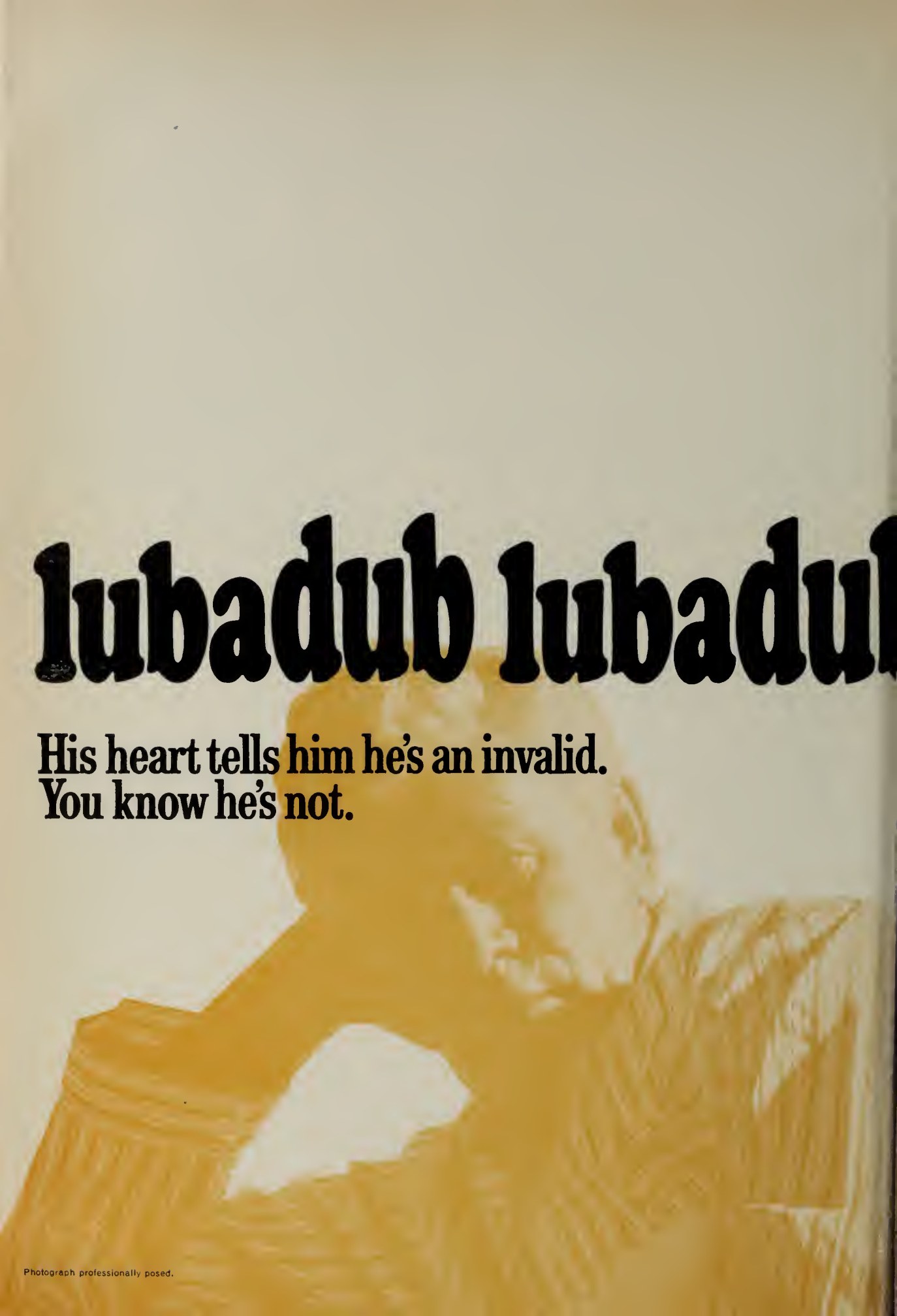
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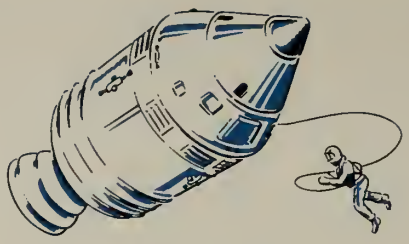
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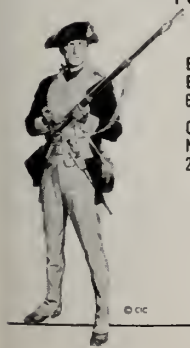
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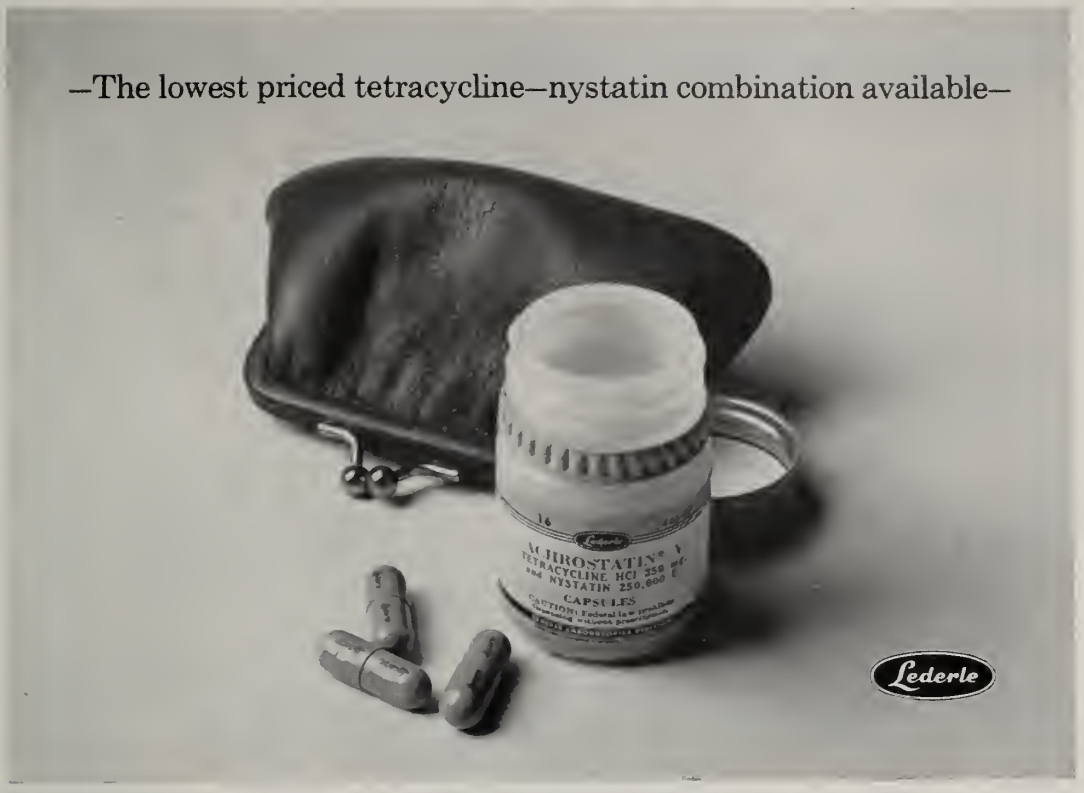
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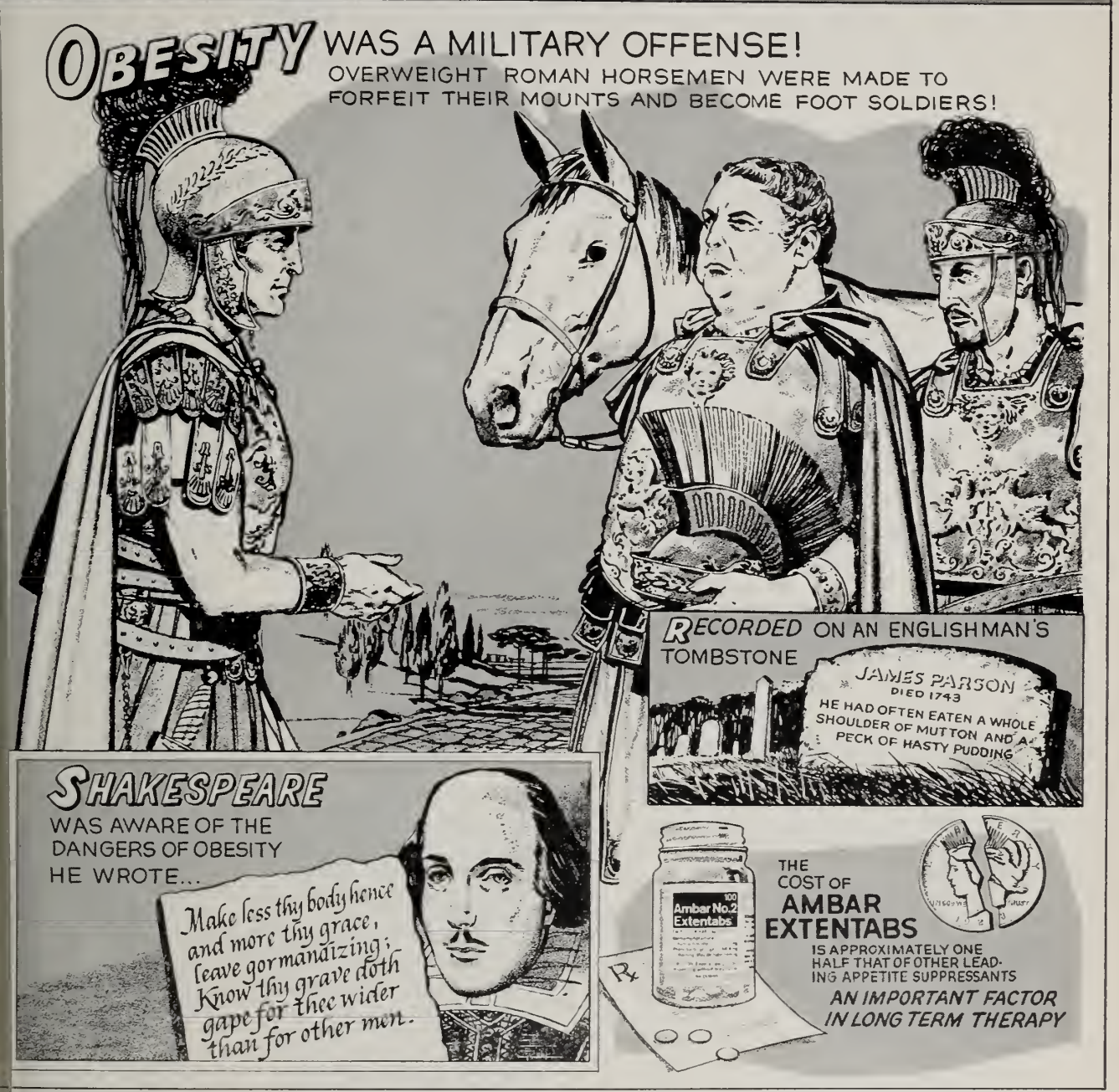
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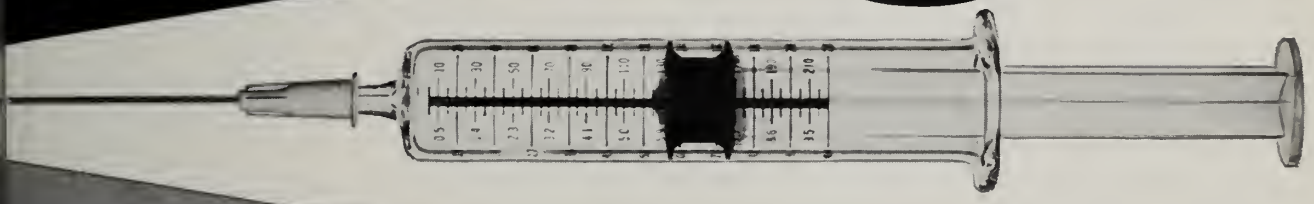
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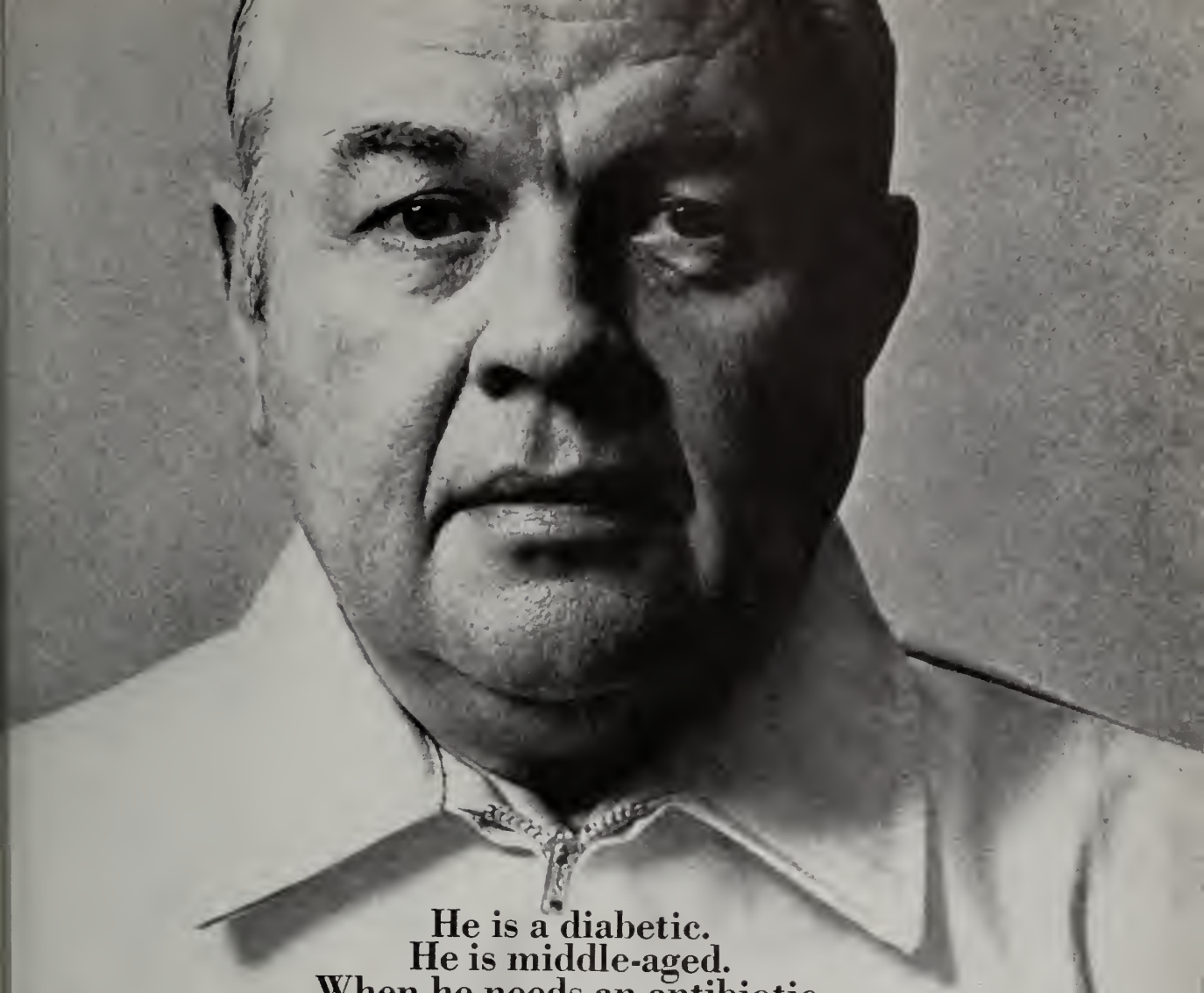
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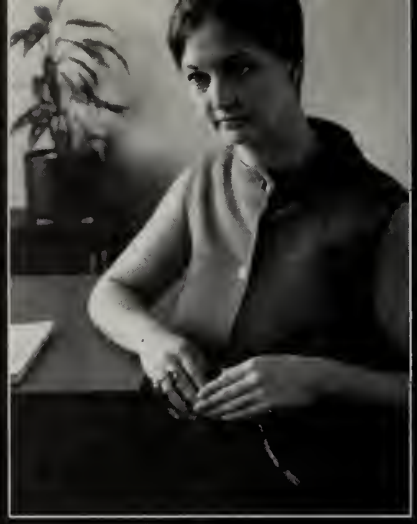
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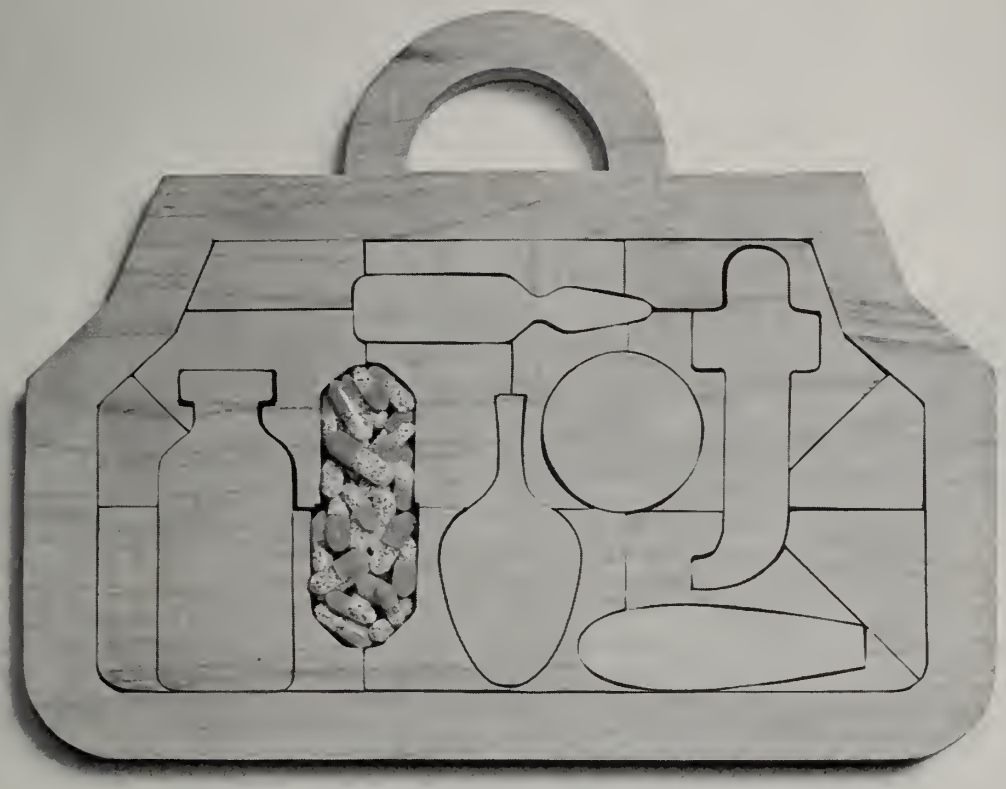
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MEDICAL MONTHLY

April, 1970
Vol. 97, No. 4
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Guest Editorial . . .

Supply and Demand

BALANCE between supply and demand produces a stable market. Whenever the demand becomes greater than the supply, prices rise. When supply exceeds demand, prices fall. In any event, someone gains. This principle is valid for economics, but not for medicine. In matters of health, when the demand exceeds the supply—everyone loses. The demand for human tissue for surgical transplants exceeds the supply—everyone is losing. This state of imbalance must be reversed. The case in point is the need for donor tissue for keratoplasties (corneal transplants).

Successful cardiac transplants have, to some degree, eclipsed the less dramatic successes in corneal transplants. The need for eye tissue for sight-restoring keratoplasties greatly exceeds the available supply. The help of every physician is required.

An individual may, by executing a donor pledge card, donate his eyes at death. The next of kin of any deceased person may authorize enucleation and donation. Hospitals have been supplied with release forms. The attending or family physician can, by providing information or suggestion, effect one of these much-needed donations of eye tissue. The cooperation of the next of kin is essential if the Eye Bank is to receive notification of the availability of eye tissue in time for it to be useful. Time is of the essence. Enucleation should be done within six hours after death to provide satisfactory tissue for sight restoration.

The Eye Bank may be called collect at any time, day or night, to set in motion the machinery to convey to someone that most precious of gifts —the gift of sight.

Mason Smith, M.D.

Old Dominion Eye Bank, 408 North 12th Street, Richmond, Virginia 23219, (703) 648-0890.

Eye Bank & Sight Conservation Society of Virginia, 707 South Jefferson Street, Roanoke, Virginia 24008, 344-2071.

A Prehistoric Case of Osteo-Trauma

RHODES B. HOLLIMAN, Ph.D.
Blacksburg, Virginia

Here is an interesting reconstruction of the wounding of an early inhabitant of Virginia.

IN APRIL, 1966, excavations were begun by the Archeological Society of Virginia on a late prehistoric Indian village site in Montgomery County, Virginia. The site was located on a cultivated bench on the east side of the Roanoke River (North Fork) about four airline miles northeast of Blacksburg on county route 723 and was designated as the Shannon Site, 44 My 8, in the records of the Smithsonian Institution, Bureau of American Ethnology.

This project was undertaken to salvage as much information as possible before the site was destroyed by the development of a golf course by the Blacksburg County Club.

Aerial photographs of the site made when the soil had been freshly plowed showed a distinctive outline of the village plan. Dark, charcoal-impregnated soil covered an oval area of about two acres surrounded by a yellow clay-loam typical of that region. The sharp delineation of soil color and composition along the village outline led to the hypothesis that a palisade had been constructed by these prehistoric people. This supposition was quickly confirmed when post holes filled with decayed organic matter were excavated around the village periphery.

The erection of this palisade must have been an arduous task for people whose digging tools were limited to sharpened sticks, antlers, stone hoes and the like. Thus, the presence of the fort-like structure indicated the possibility of hostile conditions during the period of occupancy and the need for defense. With these conjectures in mind, confirming evidence was sought in the study of traumatic conditions in the human skeletons recovered from the site.



Fig. 1. View of superior surface of rib showing embedded arrow point. Magnification 2X. Letter "a" indicates point and "b" the base of the arrow.

One hundred skeletons were excavated in the summer of 1966. An additional 24 were recovered in a quick salvage operation in 1967 when grading of the site began for construction of golf greens. All were taken to the home of this writer for cleaning and detailed study. Most of the skeletons were in an excellent state of preservation in spite

of interment of 450 ± 50 years. Soil compaction had caused considerable cracking in the bones of the crania but successful restoration was made of 80 of the initial 100 skulls recovered. The majority of burials were between 18 and 36 inches below grade and bone quality had been preserved by neutralization of the organic acid content of the soil by lime water from limestone outcroppings on the hillside above the site. Life expectancy in this group was about 27 years and the site was probably occupied for two generations.

Most of the graves were located in the south and southwestern sections of the village with random distribution elsewhere. A few graves were found outside and a few under the post holes of the palisade. Thus, we know that the fort was built after the village had been occupied for some time.

The only documentable osteo-trauma was found in skeleton number 10, a male about 42 years of age. This Indian had sustained an arrow wound in the back. Assuming that deflection did not occur, the trajectory of the arrow was from the victim's left side and nearly perpendicular to the axis of the vertebral column. Penetration occurred just under the left scapula and the stone point split the neck of the eighth left rib along its superior-inferior plane. The point of the arrow stopped against the demi-facet for the head of the rib on the body of the eighth thoracic vertebra. Apparently, the arrow shaft was pulled from the victim leaving the point embedded in bone. Over a period of time, a callus was formed around the damaged neck portion with evidence of chronic ossifying periostitis leading to lipping of the superior surface of the neck and resembling osteoarthritis. The articular facets of the head and the articular part of the tubercle were deformed by the resulting callus and bony proliferation. The point of the arrow eroded the demi-facet of the vertebral body and precipitated resorption of that surface. The point is composed of black chert measuring 21 mm long and 16 mm wide at its widest point. Considering the stabilized condition of this foreign body, it is probable that the individual carried the projectile point in his back for several years before death from other causes.



Fig. 2. X-ray of external surface of rib showing embedded arrow point. Point indistinct due to lack of contrast in density. Point is outlined for clarity.

Grateful acknowledgement is made to Carlton A. Michael, M.D., Blacksburg, for discovery of the traumatized bone while cleaning the skeleton; to C. G. Tillman, Ph.D., Blacksburg, for photographic assistance and to Charles L. Boatwright, M.D., Blacksburg, for preparation of the x-ray plate.

Department of Biology
Virginia Polytechnic Institute
Blacksburg, Virginia 24061

"Q" Fever—First Reported Case in Virginia

JOHN V. BOWYER, M.D.
Hopewell, Virginia
EDWARD L. LILLY, M.D.
JOHN O. STOVER, JR., M.D.
Richmond, Virginia

Now that the presence of "Q" fever in Virginia has been established it must be included in the differential diagnosis of acute febrile illnesses.

IN 1937 the disease "Q" Fever was brought to the attention of the medical world in the classic report of E. H. Derrick, who recognized a new occupational illness in slaughterhouse workers and dairy farmers in Queensland, Australia.[1] His differential diagnosis, then as today, included such disorders as typhus, undulant fever, typhoid and leptospirosis. Almost simultaneously, the causative organism *Coxiella* (*Rickettsia*) *burneti* was isolated from a tick by Davis & Cox in Montana,[2] the organism later infecting a laboratory worker. The first recorded United States outbreak of Query Fever, as it was initially called, was in 1946 among workers in a Texas slaughterhouse.[3] Outbreaks have since occurred in Illinois, Ohio, Wisconsin, Montana and approximately 100 cases per year are reported from California.[4,5] Case reports from other areas have established a world-wide distribution everywhere except the tropics.[6] Although bovine "Q" fever has spread to the eastern United States, human illness has been rare. "Q" fever studies in Maryland[7] have shown a strikingly significant rise in infection rate among dairy cattle and, although seriological studies indicate a 15.3% CF positivity among dairy farm residents, clinical human illness has been reported only once, in a Baltimore butcher in 1958. No previous cases have been documented in the State of Virginia, according to State Health Department statistics. We present here the first case to be reported in this State, since it seems possible that the diagnosis may have been missed hitherto in Virginia and the eastern U.S.A., and that avoidable morbidity may have occurred on this account.

Epidemiologically,[8] the rickettsia is passed transovarially from the tick to the animal reservoir including cows, sheep and goats, but other mammals and birds may be infected. Animals are asymptomatic, but in man it causes disease and is probably transmitted by direct contact with infected tissues, drinking infected milk or inhalation of dust in the neighborhood of infected animals.[8] *C. burneti* has been found to be highly resistant to desiccation, surviving for many months and even in the face of pasteurization temperature of 103°F for 30 minutes.[8]

The illness in man presents itself most commonly as in "atypical" pneumonia, especially the mycoplasma variety, with a sustained fever, severe headache, cough and myalgias. Incubation period has been established to range from 14 to 26 days.[9] Reports in the literature have described a picture suggestive of infectious mononucleosis,[10] and hepatitis as a primary manifestation is not uncommon. Biopsy of the liver in the latter cases has revealed a distinctive picture of eosinophilic necrosis of liver sinusoids.[11] Endocarditis is probably

the most serious complication;[12,13] ocular changes have been described. All these changes are thought to be initiated by capillary damage which may be widespread.[11] More recently, a chronic form of the disease has been reported from England.[14] Therapy with tetracycline is generally accepted on both clinical and experimental bases.[15]

Case Record

B.F.M., #5-27-80-50. The patient was a 29-year old Negro male, employed as a hog fat stripper at a local meat packing plant, who presented with a cough productive of scant yellow sputum, pleuritic chest pain and sore throat without fever beginning three weeks prior to admission. Two days before admission, he developed a constant dull headache with abdominal pain, fever and two shaking chills. Approximately six weeks previously he had obtained his present job which involved direct contact with cattle on several occasions as well as inhalation of air from an adjoining cattle slaughter area. There were no other complaints or pertinent aspects of the past medical history.

Physical Examination revealed an acutely ill, sweating, muscular man with no dyspnea. Temperature was 102.4° orally, pulse 92 and regular, blood pressure 130/70 and respirations 16/minute. The eyes showed white sclerae and pink conjunctivae. The neck was supple. No lymphadenopathy was initially present, but a small, nontender node developed in the left axilla on day three. The lungs had no evidence of consolidation, but the breath sounds were more prominent in the left axilla. The remainder of the physical examination was normal, including heart, abdomen and neurological.

Laboratory Data: Hemoglobin 14 Gm%, WBC 12,400 with 76% PMN's, 19% lymphocytes, 5% monocytes. Fasting blood sugar, BUN, SGOT, alkaline phosphatase, LDH, bilirubin, calcium, phosphorus, albumin, total protein, uric acid, cholesterol and routine urinalysis were all within normal limits. Initial sputa showed many PMN's and Gram positive diplococci, and pneumo-



Fig. 1. Admission P.A. chest roentgenogram.

cocci were cultured in addition to alpha strep and neisseria. Cold agglutinins, CF tests for Brucella and heterophile were all



Fig. 2. Six weeks follow-up P.A. chest roentgenogram.

negative. Blood cultures were sterile in routine and CO_2 broth for Brucella. Lumbar puncture revealed normal pressures, sugar

and protein, and no pathogens or blood cells were present. Acid-fast organisms were not found in multiple sputa or C.S. fluid and intermediate strength P.P.D. was negative at 72 hours. EKG revealed no abnormalities except frequent PVC's. A left upper lobe infiltrate was noted in P.A. and lateral chest roentgenograms. Acute and convalescent sera for the CF test for "Q" Fever contained an increase in titre with 1/8 to 1/512 on the third and eighth days of hospitalization.

Hospital Course: The patient was initially treated with procaine penicillin G, 600,000 Units I.M. every 12 hours for 3½ days. When his fever did not show appreciable improvement, he was changed to tetracycline, 500 mg. orally every 6 hours with prompt lysis. Initial and discharge chest x-rays failed to show any change in the left upper lobe infiltrate; however, follow-up films after six weeks revealed clearing of the previously noted lung lesion. (See admission and follow-up chest x-rays, P.A. views.)

Comment

The case history outlined above is typical of the course of a patient with "Q" Fever. Our patient had an acute febrile illness (see graph), minimal findings on physical examination, and a history of cattle exposure; however, Gram positive diplococci were noted on sputum stain and pneumococci were cultured from his sputum. He had a round, discrete infiltrate in the left upper lobe. "Q" Fever or other possible causes of pneumonitis were only considered after the patient failed to respond to adequate doses of penicillin for what was considered a reasonable time. The fact that the patient had been exposed to animals raised the possibility of other less common causes which were considered and eliminated by appropriate cultural and serological studies. After the studies had been obtained, and because it was felt to cover the most probable organisms producing the patient's illness, (i.e., Brucella, Coxiella or Mycoplasma), tetracycline was administered for 10 days, producing a remarkable recovery, clinically, subjectively and radiologically.

The patient whom we studied had malaise and weakness associated with his disease and

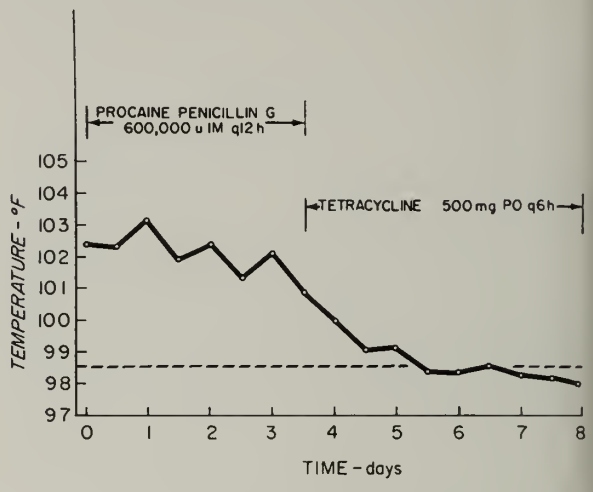


Fig. 3. Graph of hospital course.

a solitary pulmonary lesion on chest x-ray. A similar case described by Musher ultimately went to thoracotomy because of slow resolution.[16] In our case, because of the awareness that "Q" Fever infiltrates may take up to eight weeks or more to resolve, it was decided to wait and reevaluate the patient after therapy at monthly intervals for changes in the size and character of the infiltrate.

Diagnosis of "Q" Fever is made serologically on acute and convalescent sera, the complement fixation and slide agglutination tests being the most widely used. A complement fixation titre greater than 1:32 and rising, along with a clinically compatible illness are sufficient for diagnosis.[17] C.F. titres to Phase II antigen are seen to be increased in acute illness, and similar titres to Phase I antigen are characteristic of chronic disease.[13] Isolation should not be attempted unless the laboratory is specially equipped to handle *C. burneti* because of the hazard to personnel handling the organism. Whether acute and convalescent sera are drawn depends upon the physician's index of sus-

picion for a patient with a febrile disease. Many cases of "Q" Fever may be missed, albeit correctly treated, because of the empirical use of broad-spectrum antibiotics to treat acute febrile diseases.[8] If the patient has environmental or occupational exposure, and for any reason it is suspected that he has one of the less common causes of acute febrile disease, the serological and cultural studies outlined above should be obtained *before* therapy is started. Such an approach would be expected to help solve some of the difficult diagnostic problems presented by the organism.

Since this is the first reported case of "Q" Fever in Virginia, an epidemological survey of cattle herds and slaughterhouses has been started by the Virginia State Health Department. It is hoped that by reporting this case, we have alerted practitioners in this area to ascertain its true frequency, determine whether there is indeed an increasing incidence and, most important of all, reduce patient morbidity by early recognition and follow-up.

Summary

The first reported case of "Q" Fever originating in the State of Virginia is documented, the diagnostic dilemma of various syndromes of the disease is presented and the possibility of cases in the eastern United States escaping detection is emphasized.

Acknowledgments for comments in preparing this report:

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Hazards of Prolonged Low-Dose Methotrexate Therapy

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A case of severe pancytopenia resulting from methotrexate administration is presented. The physician must watch for bone marrow and liver damage when this drug is used.

FOUR-AMINO-N_{10}-METHYL PTEROYLGLUTAMIC ACID (Methotrexate) is a valuable drug in the treatment of psoriasis, and its use for life-ruining[1] psoriasis is now standard dermatologic practice in the United States.[2] While the dangers of fulminating toxicity from large doses are well known, the hazards of long-term, low-dose administration of Methotrexate are less well recognized. The following case is illustrative.

Case Report

A 20-year-old white plumber had moderately severe psoriasis for five years. For the preceding two years he had received 2.5 mg of Methotrexate daily, and his blood counts had not been checked during this time. One month before admission he developed weakness and dyspnea which progressed until he was unable to climb a flight of stairs, and for this reason sought medical attention.

Physical Examination: The patient was very pale and appeared chronically ill. The pulse was 90 per minute and the blood pressure 120/40. No retinal hemorrhages were seen and no adenopathy was present. The spleen was soft and easily felt 3 cm below the left costal margin. A firmer liver edge was palpable 5 cm below the right costal margin. Several small scaly erythematous plaques were seen on the chest and extremities. The remainder of the physical examination was normal.

Laboratory Data: The hematocrit was 15% and the white-cell count 2,300/mm^3 with a normal differential. The platelet count was 34,000/mm^3 and the reticulocyte count 0.8%. The blood smear revealed hyperchromic macrocytic red cells. A bone marrow aspirate was hypercellular and showed marked megaloblastic erythroid hyperplasia. Numerous giant metamyelocytes were present, but the white cells were otherwise unremarkable. Large amounts of stainable iron were present.

Course: Methotrexate was discontinued. Folinic acid (Calcium Leucovorin Injection), 9 mg, was given intramuscularly, and on the following day this dose was repeated. Additional folinic acid was not available, and when no more could be obtained, folic acid, 15 mg daily, was started. Forty-eight hours after the first dose of folinic acid, the patient felt stronger and his color had improved. The hematocrit rose to 19% and the reticulocyte count to 6.6%. Six days after therapy was started, his hematocrit was 23% and the reticulocyte count had risen to 43%. Subsequently his blood counts have returned to normal as shown in Fig. 1. Ten days after stopping Methotrexate both the liver and spleen were smaller. Two months later neither organ was

palpable. His psoriasis has been well controlled with topical therapy.

Discussion

Methotrexate interferes with folate metabolism by combining with and inhibiting the enzyme dihydrofolate reductase. Consequently synthesis of deoxyribonucleic acid (DNA) is impaired, resulting in the decreased production of red blood cells, leu-

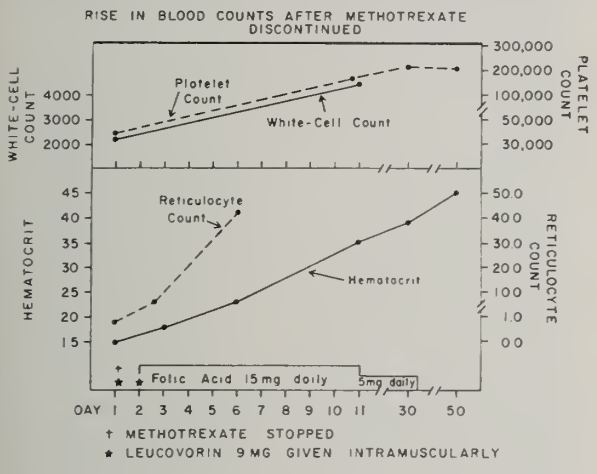


Fig. 1

kocytes, and platelets.[3] Recognition of the pancytopenia induced by Methotrexate may be delayed until irreversible injury has occurred.[4]

In treating mild cases of Methotrexate toxicity only withdrawal of the drug is indicated as bone marrow regeneration usually occurs within the following two to four weeks.[5] In more severe cases transfusions of red blood cells and platelets may be necessary. The only agent which overcomes the toxicity produced by Methotrexate is folinic acid.[4] Useful primarily in treating the accidental acute overdose of Methotrexate, folinic acid is also effective in treating pancytopenia induced by the long-term administration of this drug. Large doses of folic acid are ineffective in displacing Methotrexate,[4] and probably were not of value in this case.

The cause for this patient's hepatosplenomegaly was not determined. Recently postnecrotic cirrhosis has been described in patients on long-term regimens of Methotrexate.[6] The rapid decrease in the size of these organs following cessation of the drug suggests a relationship between the administration of Methotrexate and the patient's hepatosplenomegaly.

Summary

A case of severe pancytopenia resulting from prolonged 4-amino-n_{10}-methyl pteroylglutamic acid (Methotrexate) therapy given for psoriasis is described. The patient responded quickly to discontinuing the drug and injections of folonic acid. Hepatosplenomegaly, present initially, receded after Methotrexate was discontinued. While Methotrexate is a valuable drug for treating severe psoriasis, blood counts and liver function should be monitored closely even when the drug is given in low doses.

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Generic and Trade Names of Drugs

4-amino-n_{10}-methyl pteroylglutamic acid
Methotrexate (formerly A-methopterin)
Folinic acid—Calcium Leucovorin Injection
Folic acid—Folvite

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Multiple Esophageal Diverticula Associated with Spasm and Stricture

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This unusual case illustrates the natural history of esophageal diverticula.

DIVERTICULA of the lower esophagus are comparatively rare. Until 1952, only 126 cases were known in the world literature.[3] Others were reported after that date, but examples have been comparatively few. Belcort, in 1965, commented on the pathophysiology, pathogenesis, and surgery of lower esophageal diverticula, but provided no statistics.[1]

Habein, in 1966, described a case of epiphrenic diverticula, but these were only double diverticula and not multiple.[5] Mustard indicates in his review of esophageal diverticula that out of 75 examples, 53 were pharyngeal, 14 epibronchial, and eight epiphrenic.[6] No mention of multiple, lower esophageal diverticula was made. Wheeler, in 1947, reported that out of 20,000 barium studies of the upper G.I. tract, six mid-esophageal diverticula were found (0.3%) and three epiphrenic were seen (.105%).[8]

Cases of *multiple* diverticula of the lower esophagus are even more unusual. Guillon reported a case in 1961, but this consisted only of a single, large epiphrenic diverticulum with two smaller diverticula occurring above the first one.[4] This case does not resemble the one described in this communication. Sasaki, a Japanese author, described a case of multiple esophageal diverticula in 1961.[7]

According to Belcort, a French-Canadian author, Lortat-Jacob in 1955, Soulas in 1952, and Trial and Marot in 1934, reported on one case each in the French literature.[1] The present example may be the first reported in the English language.

Pathophysiology

Multiple diverticula should be included under the designation of epiphrenic diverticula by virtue of their geographic location. Such diverticula occur just above the diaphragm and are considered pulsion in type. It is believed that these outpocketings are caused by some underlying etiology, such as congenitally weak areas, by esophagitis, or by neuromuscular imbalance (cardiospasm). According to Goodman and Parne, sixty-five per cent of epiphrenic diverticula are high-pressure phenomena developing within or above an area of diffuse spasm or hyperactive sphincter. They are manifestations of underlying neuromuscular dysfunction and associated esophageal disorders.[3]

Case Report

The patient is a 56 year old, white woman who had had difficulty in swallowing since childhood. She required "pumping out of the stomach" on many occasions because she became obstructed while eating. A diagnosis of esophageal stricture was made while she was still a child. For many years, she had had only occasional difficulty swallowing,

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and this was controlled by drinking liquids. Six weeks prior to admission, she noticed a sensation of obstruction in the lower esophagus which persisted to the time of admission. During this time interval, she could swallow only liquids with difficulty. The rest of the history and usual laboratory studies are not significant.

Esophagoscopy was done and the operation noted a friable foreign body in the lower esophagus, as well as multiple diverticula and fibrotic stenosis. A #18 bougie was passed into the stomach.

On radiological examination of the esophagus, the radiologist noted that the distal 3 cm. of the esophagus contained a mass of small diverticula projecting in all directions (Figs. 1A & B). Associated esophageal spasm was seen. The esophagus filled to the aortic arch before any barium traversed the affected area which was seen to have a lumen diameter of only one or two millimeters.

The patient was advised to have resection of the involved area but has refused to date.

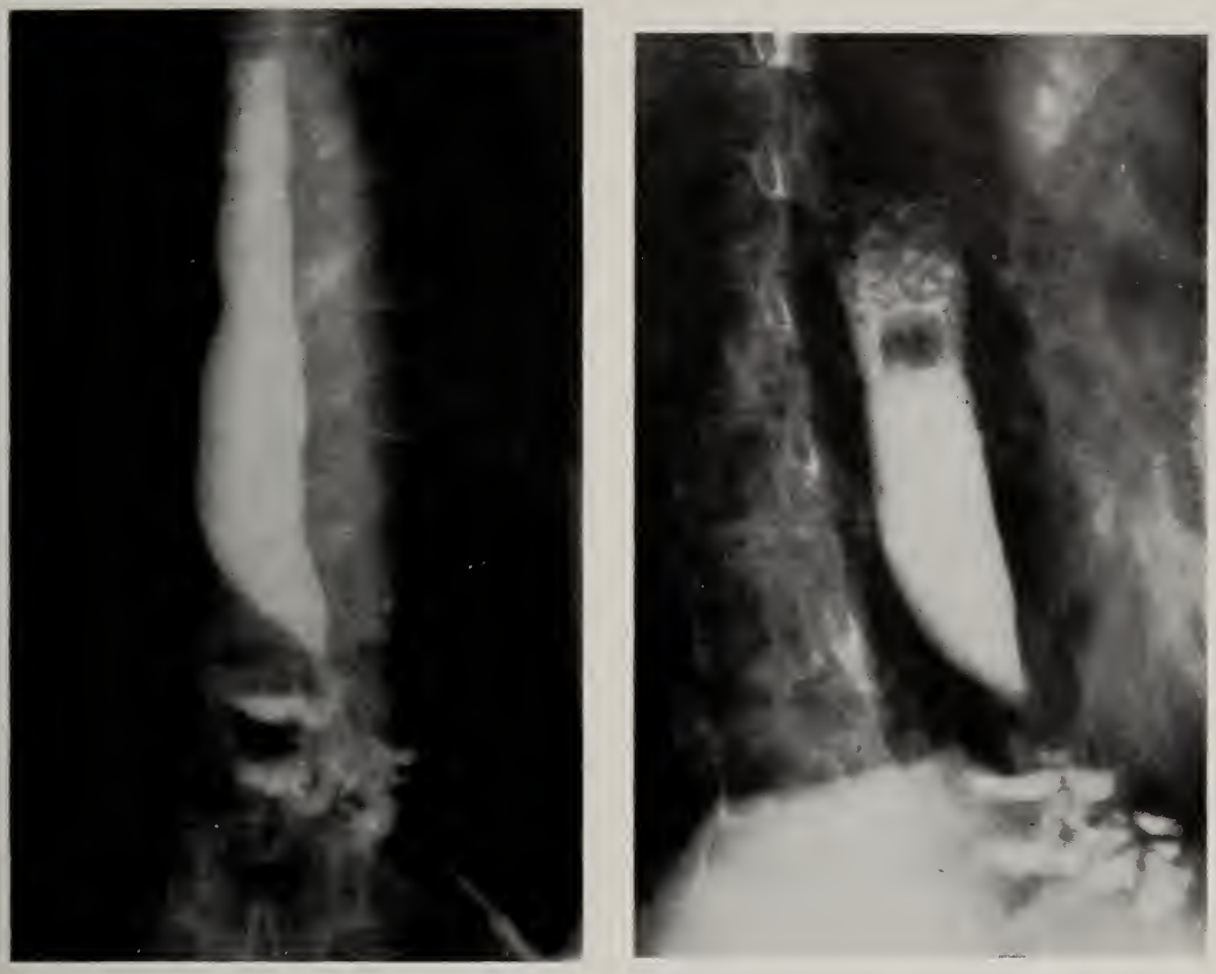


Fig. 1A & B. Multiple small diverticula are noted in the epiphrenic area. Esophageal spasm is also seen. The radiographic appearance resembles diverticular disease of the colon.

Comments and Summary

A case of multiple lower esophageal diverticula is presented because of its rarity and because it illustrates the natural history and sequence of events related to the formation of esophageal (epiphrenic) diverticula.

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Life, Death, and the Family Physician

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Helping his patient prepare for death is an important duty of the physician but one for which he is not trained in medical school.

IT IS PERHAPS IRONIC as well as symbolic of the taboos in our present day society that the subject of the physician's relationship with the dying patient is included in a conference entitled, "Delicate Areas of Medical Practice" dealing with the universally significant topics of sex, death, and marriage. One would think that these matters are the very stuff of which the physician's practice is made. He deals daily with life and death, sex and marriage; and yet with the latter his knowledge is woefully deficient. In this presentation I shall limit my remarks to the role of the family physician as he deals in his everyday practice with life and death.

The Physician's Background as It Relates to Treating the Dying Patient

How is the graduating medical student prepared to work with his dying patients and their families? Generally speaking he is poorly prepared. If one looks at medical school curricula, the student is quickly submerged in subcellular biology and biophysics. In his clinical years to pass he must know the serum asphalt and rhubarb levels in Woganghi's Syndrome. But what of such subjects as euthanasia, the prolongation of life by artificial means, or treatment of the terminally ill patient? These matters are not taught, at least formally; nor is there much faculty-student dialogue about them. The student through some intuitive mode or by osmosis supposedly learns about them. Or if he wishes he may deny their existence.

The situation existing in medical schools, however, does not mean that the medical student is not interested in these areas. Most students are now quite socially aware and cognizant of the medical profession's shortcomings in delivering health care. He also knows that psychological, sociological, and ethical issues are, and are becoming increasingly more so, an essential and integral part of medical care. We are finding that students want to discuss the problems and dilemmas of everyday practice, such as revealing diagnoses (especially of fatal illnesses) to patients, when does one "heroically" treat the dying patient and when does one "pull the plug". I remember an incident several years ago when I suggested an interdepartmental conference centering around the question of withholding antibiotic therapy in a senile patient with widespread metastatic disease. The students and house staff were most interested. But a professor of medicine at the time remarked, "We never discuss such issues with students. That's something they learn on their own. We teach that they must treat every patient no matter what. But of course 'entre nous' we do withhold treatment under some circumstances." These "circumstances" need to be aired openly and with our students. Otherwise we are perpetuating a travesty

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and hypocritical situation in medicine for which there is no place.

The Physician's Attitude Toward Death

Is there any explanation for this reluctance on the physician's part to talk about and examine openly the treatment of the dying patient and in particular his *relationship* with the dying patient? Although there are undoubtedly multiple factors involved, a major one relates to the manner in which the physician handles his own death fear. It is as if he handles his fear by "fighting and conquering" death. By becoming a physician he intellectually masters disease and body pathology through his knowledge of its processes. With his knowledge of disease and therapeutics, he wards off the spectre of death. Along this line it is interesting to note that death anxiety in one study was found to be highest in medical students interested in psychiatry,[1] whereas students going into surgical specialties exhibited a cool detachment from it.

When the physician realizes ultimately with his terminally ill patient that he cannot conquer death, he may retreat from the patient to combat his own anxiety. Likewise he may not wish to recognize openly such concepts as euthanasia as it punctures his omnipotent and magical fantasies that death can be avoided by "fighting" disease. One of the most frightened and panic-stricken patients with whom I have worked psychotherapeutically was a 28-year-old father who was in the terminal stages of sacral chrondrosarcoma. Much of this patient's extreme anxiety was related to his physician's ceasing to include him on ward rounds. He was suffering a form of sensory deprivation due to the lack of human contact. In reviewing his case with the surgical house staff who were caring for him, I discovered that they identified with this patient, looking upon him as very much like themselves. The feelings of helplessness, as well as their thinking of themselves as so close to him in age, etc., literally drove them away from him. He then picked up their feelings of hopelessness and futility. With my encouragement they began including him on their rounds, and his anxiety, at least to some extent, subsided.

The Patient's Attitude Toward Death

Freud in his essay, "Thoughts on War and Death" [2] written in 1915, noted that man's unconscious cannot conceive of his own death. He wrote at that time:

> Our death is indeed unimaginable, and whenever we make the attempt to imagine it we can perceive that we really survive as spectators. Hence the psychoanalytic school could venture on the assertion that at bottom no one believes in his own death, or to put the same thing in another way, in the unconscious every one of us is convinced of his own immortality.

To my knowledge this concept has not been put more succinctly or meaningfully since that time.

Of course death should not always be equated with anxiety. Weisman and Kastenbaum[3] in their excellent monograph, "The Psychological Autopsy," found that frequently the geriatric patient accepted death with equanimity and little anxiety. However, aside from looking at death as a respite, other meanings of death (perhaps more to the young adult rather than the elderly patient) do have anxiety-producing connotations. These meanings center around the concept of *separation*. The separation takes various forms but is related to loss of contact with loved ones and the world about one. In addition to annihilation and alienation, death can also be associated with loss of bodily and emotional control. Obviously these fears have meaning at both symbolic and realistic levels. And it is also important to realize from an existential viewpoint that man's awareness of the inevitability of death is what makes us distinctly human. And again to quote from Freud's essay:

We remember the old saying: *Si vis pacem, para bellum.* If you desire peace, prepare for war.

It would be timely thus to paraphrase it: *Si vis vitam, para mortem.* If you would endure life, be prepared for death.

After this all too brief and sketchy résumé, let us turn to the physician's relationship with the dying patient and to what he can do to prepare the patient for death.

The Physician's Relationship with the Dying Patient

In some ways I believe it is "carrying coals to New Castle" for a psychiatrist to tell the family physician about the dying patient. For the physician deals with the problem face-to-face daily; whereas the psychiatrist actually quite infrequently treats terminally ill patients. To the contrary, many psychiatrists shun the physically ill patient with such rationalizations as "the reality problems are too great". As mentioned earlier, the study by Livingston and Zimet[1] points out high death anxiety among prospective psychiatrists. On the other hand the psychiatrist, through his expertise in the doctor-patient relationship (which is after all his major psychotherapeutic tool) and his understanding of defense mechanisms by which patients handle their anxiety, should be able to shed some light on the matter. There have been and are also some psychiatrists who have looked closely at the psychological reactions of patients to the threat of physical illness and death. So we are not in totally strange territory in making some observations.

One of the common mechanisms of defense of the fatally ill patient is that of *denial* and no discussion would be complete without it. It is important to keep in mind that this is an unconscious mechanism and is not used volitionally by the patient. By denial I refer to the patient's keeping out of his awareness the import and fate of his illness. This mechanism can have both protective and destructive functions. Examples of the latter are the alcoholic who refuses to stop drinking even though he is dying of cirrhosis as he denies his alcoholism and the woman with a breast mass who delays seeking medical attention as she denies she has a mass or hopes "it will go away". Conversely denial can protect the patient. Hackett[4] observed that myocardial infarction patients in coronary care units had less stormy courses if they denied the seriousness of their situation. Related to denial is the importance of *hope* to the fatally ill. The physician if he finds it necessary to confront the patient's denial should avoid taking away hope in doing so.

By far the most important and difficult aspect of the physician's relationship with the dying patient is his being able to stay with him to the end and not abandon him. Equally important is allowing the patient to express his feelings about his predicament. In some ways this phase of the relationship is more difficult for the physician than the patient. He must give up his omnipotent fantasies of being able to "cure" all patients and to tolerate his own anxieties about death. Some patients are aware they are dying and yet no one will discuss their situation with them. Cancer patients, for example, show a form of "middle knowledge" in which they know their diagnosis in spite of not having been told it directly. The physician knows; the family knows; and yet no one communicates with the other. Often the tenseness among all is relieved with an opening of communication channels. And it may be worth noting in closing that at times the patient is less anxious about death than the physician. During a study of the psychological effects of open-heart operations I visited a young man, with whom I had been working, on a Friday before a long weekend. I thought to myself, "Gee, he looks bad. I hope he makes it through the weekend." I said to him, somewhat glumly, "I'll see you Monday." He replied matter-of-factly, "You will if I'm still alive."

Summary

In order to be an effective physician the medical student must be prepared to treat patients in the terminal phases of their illnesses. To do so he must be aware of his anxiety and that of the patient concerning death. Establishing a relationship with the dying patient and not abandoning him can be a therapeutic and meaningful experience for both physician and patient.

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MULTIPLE ESOPHAGEAL DIVERTICULA ASSOCIATED WITH SPASM AND STRICTURE—

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(*Continued from page* 221)

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Geographic Patterns of Large Intestine and Rectal Malignancy Mortality in Virginia

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The death rate from malignancy of the large intestine and rectum varies in different sections of the country and in different parts of the State.

IN A STUDY of the geographic patterns of death rates due to malignant neoplasms for the continental United States, it was noted that the southeast part enjoyed, generally, more favorable rates than most of the rest of the nation. In the eastern part there appeared also to be a dividing line, separating the less favorable areas to the North from the more favorable ones to the South. This line appeared to pass approximately East and West through the States of Virginia, West Virginia and Kentucky. For this reason, the geographic patterns of cancer mortality for the State of Virginia were studied in greater detail.

It had been noted from still other studies that malignancies of the large intestine and rectum appeared to show greater geographic contrasts, suggesting that they were more sensitive to environmental factors. These types were, therefore, selected for more intensive study. In order to avoid the nosological problem relating to the classification of a particular case of one or the other of the two, the sum of the deaths due to the two was utilized. This was further believed justified by the fact that these two types each appeared to have somewhat similar geographic patterns.

The death rates for each county were computed in the following manner.

The total deaths for each county for malignancies of the large intestine and rectum (International Classification of Diseases 153 and 154), for the five year period 1958 to 1962 inclusive, were divided by that part of the 1960 population of that county aged 50 and over. The population data were obtained from the 1960 U. S. Census of Population. Since for all practical purposes, those 50 and over may be considered as the population at risk, the resulting ratio will yield an approximately age-adjusted death rate. Since the data for the independent cities in the State were given independently of those for the counties, both the deaths and the population were merged with the corresponding figures for the most nearly related county. The resulting figures were divided by the corresponding death rate for the entire United States for its 1960 population aged 50 and over, for the same period of years. This yielded a figure which expressed the relative ratio of the death rates in each county for these causes to that of the United States as a whole.

The resulting figures were plotted out on a map as shown in Figure 1, using four different shades: White for ratios .49 or lower, light gray for ratios between .50 and .75, dark gray for ratios between .76 and .99, and black for ratios 1.0 and over. Figures written into each county represent the actual numerical value of the ratio for that county.

KRASNOW, SHELLEY, *Director of Research, Georator Corporation, Manassas.*

Notwithstanding that a five year total was utilized and that these two causes are responsible for a considerable proportion of the deaths due to malignant neoplasms, the

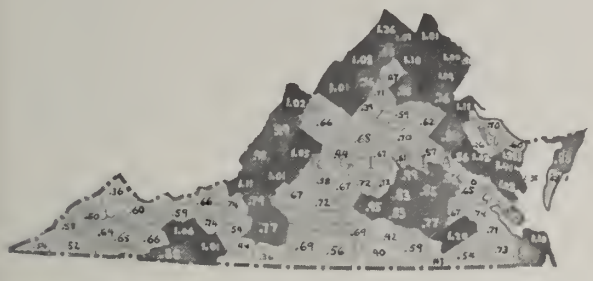


Fig. 1. Approximately age-adjusted death rates, primary malignancies, large intestine and rectum combined, 1958-62, inclusive, expressed as ratio of corresponding U.S. death rates.

numbers involved in some counties are too small to be truly statistically significant. For this reason, except in those counties with rather large populations, too much weight cannot be given to the figures for a single county. Nonetheless, it will be noted that there is a general pattern and that, generally speaking, the counties in the central southern part of the State have the more favorable experience. It will be noted also that the counties in the extreme southwestern part of the State enjoy quite favorable rates, in this respect being consistent with the southern portion of West Virginia and the southeastern portion of the State of Kentucky. In fact, the portions of the three States mentioned, together, form a rather large area of consistently low rates for malignancies of these types.

No attempt is made at present to offer an explanation for the distribution noted. However, it is pertinent to point out here that investigators in other parts of the world have implicated such factors as temperature, soil type and soil moisture. The writer has found on a national basis an apparent relationship with total annual rainfall and with the chilling effect of wind and low temperature combined. An analysis of the Virginia data has not, however, been attempted by the writer. That on the nation as a whole is in course of preparation for publication.

The writer here acknowledges with thanks the cooperation of Mr. Deane Huxtable, State Registrar, who provided the mortality figures, Mrs. Jeannine Tripp who plotted the maps and performed a number of the necessary computations and Mrs. Janet Shirley who aided in preparation of the manuscript.

Georator Corporation
Manassas, Virginia 22110

Clinical Center Study of Patients with Ewing's Sarcoma

The cooperation of physicians is requested in the referral of patients with Ewing's Sarcoma for a continuing study being conducted by the Radiation Branch of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Patients who have received no treatment are preferred, but selected patients with previous therapy will also be accepted for admission as inpatients. Upon completion of their studies, patients will be returned to the care of the referring physican, who will receive a summary of findings.

Physicians interested in having their patients considered for admission to this study may write or telephone: Ralph E. Johnson, M.D., Clinical Center, Room B1B-41B, National Institutes of Health, Bethesda, Maryland 20014. Telephone: 496-5457 (Area Code 301)

Clinicopathological Conference . . . .

Intestinal Obstruction and Anemia

Edited by—

JOHN H. MOON, M.D.
W. J. FRABLE, M.D.

Protocol Prepared by—

JOHN H. MOON, M.D.
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DISCUSSANT:

J. M. Harrison, M.D., Clinical Professor of Surgery, Virginia Commonwealth University, Health Sciences Division, Richmond.

Clinical History

This 70-year-old, Negro female was brought to the Medical College of Virginia emergency room by ambulance on 3/9/68, with a history of having been well until three weeks before when she rather abruptly lost her appetite and began vomiting every time she ate. For the two weeks prior to admission, she had been able to drink only buttermilk and water. Six days prior to admission, she complained to her family that she became extremely dizzy upon arising and stumbled when she attempted to walk. The vomitus consisted of undigested food particles and she denied hematemesis. There had been no change in bowel habits and her stools were reported to be of normal color and consistency. She denied any abdominal distention. Her appetite had been excellent until three weeks before and her dietary history sounded completely adequate. There had been no weight loss.

Review of Systems: HEENT—Negative. C-R: She was short of breath at the time she was seen in the emergency room, but denied any previous history of shortness of breath, dyspnea on exertion, orthopnea, paroxysmal nocturnal dyspnea, chest pain, edema or palpitations. GI: See present illness. GU: Two days prior to admission, she complained of feeling hot and developed urinary frequency, but denied hematuria, dysuria, shaking chills or prior fever. Neuromuscular: Negative.

Past Medical History: Negative except for a "tumor" removed from her back ten years previously.

Family History: Non-contributory. Social History: Negative.

Physical Examination: BP 104/50, P 120, R 32, T 100.6°. Patient was a well-developed, obese, elderly Negro woman who was in moderate respiratory distress, breathing rapidly and deeply but who appeared to be alert and oriented. Head was normal without trauma. Funduscopic examination revealed Grade III arteriosclerotic fundi with old exudates bilaterally. Pharynx was clear. The mucous membranes were pale but moist. Neck was supple. Chest was symmetrical. Breasts were small without masses. Lungs clear to auscultation and percussion. Heart revealed a tachycardia at the rate of 120. There was a Grade I/VI soft, apical systolic murmur without radiation. No gallop rhythm or pericardial friction rub was detected. The abdomen was obese. No organs or masses were detected and no tenderness was noted. Bowel sounds were hypoactive. Extremities revealed a trace of pretibial pitting edema, but no clubbing or cyanosis. Neurological examination was within normal limits. Lymphatics, normal. Peripheral pulses, normal. Rectal examination, within normal limits. A small amount of black stool was obtained on the examining glove which was Hematest negative. Pelvic examination not recorded.

Laboratory Data: The urine was acid with a specific gravity of 1.023. Sugar and

acetone were negative but albumin was positive. Microscopic examination of the urine sediment revealed 2-3 finely granular and hyaline casts/hpf and 0-3 white cells/hpf. Hemoglobin 4.5 gm%, white count 21,600/mm^3 with 86% neutrophils, 1% eosinophils, 1% basophils, 10% lymphocytes, 3% monocytes. There were 3 nucleated red cells/100 white cells. Reticulocyte count was 7.4 gm.% Platelet count 320,000/mm^3. The peripheral smear showed a very striking degree of hypochromia with an increased amount of anisocytosis and a moderate increase in poikilocytosis. An increased amount of polychromasia was apparent. BUN greater than 75 mg%, blood sugar 123 mg%. Serum sodium 148 mEq/l, potassium 4.3 mEq/l, chlorides 118 and CO_2 18 mEq/l. Arterial blood gases revealed a PCO_2 of 14, bicarbonate of 8.5, PO_2 of 87, and a pH of 7.41. A bone marrow aspiration was performed the night of admission which revealed a cellular marrow with normoblastic erythroid hyperplasia and a tendency to basophilic normoblastic arrest. Megakaryocytes were normal in number. Granulopoiesis was active but showed no evidence of maturation arrest. There was no stainable marrow iron. Total serum bilirubin 1.8 mg% with 0.9 mg% direct reacting. Total protein 5.4 gm% with 2.6 gm% albumin. LDH 112 (normal 20-68); SGOT 34 RFU; creatinine 1.2; uric acid 6.2 mg%. Pulmonary function studies with the patient breathing room air suggested normal oxygenation of arterial blood with marked alveolar hyperventilation. There appeared to be a combination of severe respiratory alkalosis with a superimposed metabolic acidosis.

Patient was transfused with two units of packed red cells and given intravenous fluids and sodium bicarbonate which resulted in marked improvement in her tachypnea. Repeat arterial blood gas studies with the patient receiving five liters of nasal oxygen per minute revealed that the metabolic acidosis had been corrected and there was only a moderate respiratory alkalosis.

Following a third transfusion, her hemoglobin was reported as 6.7 gm%. Her stools remained black and became positive for blood on 3/12/68. An electrocardiogram was reported as being within normal limits. A portable chest film showed a small area of plate atelectasis at the left lateral costophrenic angle with borderline enlargement of the heart. Following improvement in her clinical condition, an upper GI series was performed which suggested a leiomyoma on the lesser curvature of the stomach. Hiatus hernia without reflux or esophagitis was also noted. Blood and urine cultures remained negative. After stabilization of the patient's condition, an abdominal operation was done on 3/12/68.

Clinical Discussion

Dr. J. M. Harrison: This is an interesting case today. Briefly, this is a 70-year-old colored female who appeared with a short history of abdominal distress and vomiting, who on physical examination did not have much to present except for evidence of some generalized arteriosclerosis and dehydration and whose laboratory work was important primarily in that it showed a very severe type of anemia which was probably blood-loss in type and whose x-rays revealed what was thought to be a lesion in the stomach. So in short, the CPC today is a discussion of the differential diagnosis of lesions in the stomachs in patients of this age who present a similar picture to the one here.

In order to arrive at what type of lesion in the stomach this patient has, I think we would have to go over this history, and try to dissect out what features might help us to the correct diagnosis. This 70-year-old lady came to the hospital with a history of having been well until three weeks prior to admission when she rather abruptly lost her appetite and began to vomit. I think the pertinent thing is that the history is quite short—it went back for three weeks and

during this whole time she vomited. This means that the patient had some type of gastric obstruction either in the pyloric end of the stomach or in the esophageal end of the stomach. The most common type of obstruction in the stomach is due to benign peptic ulcer disease either duodenal ulcer or channel ulcer or pyloric ulcer. Obstruction represents an end result of a long and persistent ulcer disease. One would expect that if this was present, you would have some history that the patient had had pain or some symptoms for sometime. The fact that she did not have any pre-existing symptoms suggests that ulcer disease was not the cause of obstruction in this individual. This brings us then to neoplastic lesions of the stomach. As we all know, in the patient who has a neoplastic lesion of the stomach, the history is usually very subtle; they have no symptoms for long periods of time and then when they present themselves, they have a short history. I think it would be consistent with this protocol that the patient has some type of neoplasm.

We then move on in the protocol and find that two weeks prior to admission, she had been able to drink only buttermilk and water. That is the sort of statement that bothers me a little bit because although I don't know how anybody can drink buttermilk, it has been my experience that people who do drink buttermilk are people who are gastric conscious and the dyspeptic type. It suggests that this patient may have had some symptoms for longer than the protocol indicated. She then complained about a week before she came to the hospital that she was dizzy and stumbled around. I think the pertinence of this is revealed later in the protocol when we find that she had a hemoglobin of 4 gms. This is probably simply related to her marked anemia. The vomiting consisted of undigested food particles. This again suggests that her obstruction is not down in the intestinal tract, at least below the Ampulla of Vater, and if in truth she has an obstruction, it must be somewhere in the region of the duodenum, pylorus or perhaps in the lower end of the esophagus. The only other pertinent thing in the history is that the patient has lost no weight. The history has thus far indicated that she has a neoplasm, probably malignant, and yet one wonders with the absence of weight loss whether this in fact is true. So I think it certainly means that we are going to have to discuss benign lesions of the stomach as well as malignant ones.

The review of systems is not really important. The patient had had some suggested urinary tract infection, but this is unrelated to her primary problem. The past medical history might be pertinent—we are told that she had a tumor of some type removed from her back 10 years previously. This most likely was a lipoma, but it does bring up a question of whether it could be some type of skin tumor which might also be manifested by metastasis in the stomach. We think right away of melanoma with a possible metastatic lesion of the stomach, or reticulum cell sarcoma of the skin with a lesion in the stomach. These are unlikely.

The physical examination revealed a temperature of 100.6°, the patient had a rapid pulse, and she had rapid respirations. She is obviously dehydrated which helps to explain both of these. She has some evidence of generalized arteriosclerosis as brought out by the fact that the funduscopic examination revealed these changes. Her mucous membranes were pale, again suggestive of the severe anemia. On abdominal examination, however, the patient does not have anything of great pertinence. There is no mention made of a mass. Her liver is not palpable. She does have some blood, apparently, in her stool. It is interesting to me that here is a patient that has had no pelvic examination and yet who has every laboratory study that I can figure—blood gases and what not— and no pelvic exam. I think this is pertinent in this patient when we are discussing lesions of the stomach because one thing that has to be discussed, of

course, is a Krukenberg tumor and as you well know, this shows up frequently in the ovaries as well as in the intestinal tract, and when it does, about 90% of the time both ovaries are involved. So it would have been nice to know whether there was or was not a mass on pelvic.

In any event, the laboratory work shows that the urine has some albumin in it, some casts. These things are indicative that she probably has some arteriosclerotic kidney disease. She had a bone marrow study which showed active bone marrow and a reticulocyte count which is markedly increased and she has other evidence of normoblastic erythroid hyperplasia, again changes which simply indicate a severe anemia and changes which, in my mind, are consistent with a blood-loss type of anemia. Her liver function tests are not particularly off. She does have an elevated BUN of 75 mg%. Now this is simply indicative of a patient who has been vomiting for three weeks, who is moderately or severely dehydrated, and in addition to this has some arteriosclerotic kidney disease. The dehydration superimposed on this, I am sure, has produced the elevated BUN.

We are then told that the patient was transfused with two units of packed cells and given intravenous fluids. She had her acidosis corrected with sodium bicarbonate. Following her third transfusion, her hemoglobin had risen to 6.7 gm and shortly after that the patient was operated upon. I am a little confused about this statement because it is not the general policy on the Surgical Service to operate on patients when their hemoglobin is at 6.7 gm. It is certainly true that if a patient comes in and their original hemoglobin was 4 gm, you are not going to try to get that hemoglobin up to 12 or 14 gm before you operate on them, but you certainly as a general rule electively try to get it to maybe 9 or 10 gms. The fact that she was operated on with 6.7 gm indicates to me that she was operated on as a semi-emergency although we are not told that in the protocol. I assume that she was beginning to bleed again and it was felt that no further studies were justified in the face of continued bleeding.

She did undergo a GI series which showed a suggested leiomyoma on the lesser curvature of the stomach. She did not have a gastric analysis which may have been helpful.

Dr. Glenn, would you like to show the x-rays now?

Dr. James Glenn: This is a representative chest x-ray taken on 3/12/68. The heart is at the upper limits of normal size. There is slight amount of blunting of each lateral costophrenic angle. That was inconstant on other films and probably was due to a small amount of pleural fluid. The lungs were otherwise clear.



Fig. 1. X-ray of stomach showing large filling defect on the lesser curvature. Note smooth outlines of the defect.

This is a film of the upper gastrointestinal series on 3/12/68. You can see a large hiatus hernia of the sliding type. There is also a large filling defect (Fig. 1) in the stomach,

in the upper portion of the body, near the lesser curvature aspect. Less well seen on this film, are three collections of barium which appear to be ulcer craters and are better seen on the lateral view.

On spot films, you can again see the three ulcer craters and the lesion appears to be attached along the posterior aspect of the lesser curvature and there are right angle margins of the lesion such as you see in intramural lesions. This is against its being a mucosal lesion such as carcinoma or a large polyp. If there is an intramural lesion, leiomyoma would be the most likely diagnosis. Other intramural lesions could present a similar appearance such as lipoma or neurofibroma and with any of these benign lesions I mentioned, you could have the sarcomatous variety and have the same x-ray appearance.

This x-ray picture is unusual for a metastasis but still possible. One of the metastases that is known to ulcerate is malignant melanoma. A large fungating carcinoma cannot be definitely ruled out but is probably less likely than the lesions I mentioned; and I think that it would be a very unusual appearance for a tremendous edema around benign ulcers, but that is still a slight possibility.

Dr. Harrison: As you can see, after one views these x-rays it pretty well narrows down the diagnosis and we can eliminate any non-neoplastic disease. This involves, as Dr. Glenn stated, the differential diagnosis of a neoplasm in the stomach and although the few cases that I have seen that have presented like this are either lymphosarcomas or leiomyosarcomas, I will go over briefly the differential diagnosis.

The first thing, of course, is to know benign lesions can occur in the stomach and I have enumerated some of them. Lipoma is extremely rare. It is usually pedunculated; usually does not ulcerate and does not, as a rule, occur in this part of the stomach. Neurofibroma, although it is talked about in the literature, is an extremely rare lesion in the stomach and I think we can eliminate that. Glomus tumors are smaller lesions than the one that appears here. I think they are usually in the pyloric end of the stomach. Eosinophilic granuloma is something that has to be considered, but here again patients that have this are said to have a rather long history, usually the lesion is smaller and usually the lesion when it occurs is in the distal end of the stomach. Carcinoid is a possibility. Only approximately 2-3% of patients who have carcinoids of the GI tract will have them in the stomach and usually when they appear in the stomach, they are smaller lesions. They are usually in the midportion or on the greater curvature. They are well demarcated. They can ulcerate, but they do not as a rule obtain tremendous size. Heterotopic pancreatic tissue can occur but usually this is in the pyloric end of the stomach and certainly does not present as this patient with a huge fungating mass which fills practically the entire lumen of the stomach. Polyp, as Dr. Glenn indicated, is a possibility. Frequently, however, these are multiple and it would be unusual to find one of this degree that was still benign and was not accompanied by perhaps some other smaller polyps in the stomach. The only benign neoplasm that I think is probably really relative here is leiomyoma. These are fairly common tumors, they do arise in the wall, and they push the mucosa in.

I reviewed some recent literature on leiomyomas of the stomach. It is stated that it is the most common benign neoplasm. In some series of autopsied patients who did not have known primary stomach pathology, approximately 25 to 35% would show small leiomyomas in the stomach. It is interesting to note that over half of these occurred in the pars media portion of the stomach. When they did occur, they were usually quite well defined and small and represented homogeneous type nodules although they could ulcerate. If they were

still benign, the ones that were found were less than 2 cm and usually they were incidental findings. The thing that I think is important to point out is if you have a clinically suspected leiomyoma which is large, certainly of the variety that appears on this x-rav and particularly if there has been bleeding it makes us think, at least in my mind, more of a leiomyosarcoma than the benign variety.

If we eliminate the benign neoplasms, we are then back to the malignant lesions of the stomach and we have to think of primary and metastatic malignancies. There have been documented cases of squamous cell carcinomas both of skin and lung that have metastasized to the stomach. We had a patient at MCV several years ago, who had had a pneumonectomy for cancer, came in for perforated gastric ulcer, had a gastric resection and had a perforated cancer of the stomach which was a squamous cell and thought to be metastatic. Thyroid cancer can metastasize to the stomach. Kaposi's sarcoma I don't think is relative to this case. Metastatic melanoma is something I consider in this patient since she did have a skin lesion, but that was 10 years ago and it would be rare to find a melanoma that looked like this. I rule it out simply because I thing there are other things that I think are more likely.

This brings us back to what primary malignancies occur in the stomach. Certainly any patient who had a lesion in the stomach—a carcinoma, if you think it is malignant, is the most likely thing. But there are certain features of this radiologically which are against its being carcinoma. As Dr. Glenn indicated, you can get a carcinoma which is a large fungating lesion but it has been my experience that patients who have carcinomas that have progressed to this point usually have had some weight loss or some symptoms before hand. Carcinoma is a tumor which has fairly good fixations of the wall of the stomach and I think that the symptoms usually occur earlier in it than they did in this case. If it happens to be the linitis plastica type carcinoma, you get the water bottle type of stomach which this patient does not have. If it is a superficial spreading type of carcinoma, you get x-rays which are different than what this patient has and if it is the most common type of a small ulcerated carcinoma, you don't get a picture like this. So I think carcinoma has to be considered, but it is not the diagnosis in this patient.

Roughly 2-3% of all gastric neoplasms are sarcomas. The most common one, of course, is lymphosarcoma or one of the lymphomas and the second most common is leiomyosarcoma. The liposarcomas, the rhabdomyosarcomas and other types of sarcomas are practically medical oddities and rarely occur. The most likely thing is that this patient either has a lymphoma or she has a leiomyosarcoma and I don't know of any possible way that one can make this differential diagnosis without operation but it might be fun just to try.

In a recent paper that came out in Annals of Surgery in August, 1969, there were 100 cases of lymphoma of the stomach that were reviewed at Mt. Sinai Hospital with this type of distribution.[1] Seventy-six percent of them were lymphosarcomas, 19 reticulum cell sarcomas, three giant follicular lymphomas and two Hodgkins' disease. This would mean on a statistical basis, this lesion in this patient would most likely be just a lymphosarcoma.

A rather interesting thing was that in going over the histories of these patients, the patients who had lymphosarcoma had a long history and the patients who had reticulum cell sarcoma had a short history. If this is of any pertinence, relating it to this particular patient who has a short history, this is a reticulum cell sarcoma. I think this would not be illogical although if I am correct, it would be a pure guess. Another thing, I thing, that is of interest is that although x-raywise and clinically our patient can have either lymphosarcoma or leio-

myosarcoma, if you review histories on these patients, you will find that the patient with the leiomyosarcoma usually presents with massive bleeding when they have lesions of this size and I am not sure from this protocol whether our patient had massive bleeding or not. I think she did not. I think she had chronic bleeding for a long time and then may have started oozing again before she was operated on. So if this is pertinent, this would be more in keeping that this is not a leiomyosarcoma, but a lymphosarcoma.

So my diagnosis lays between leiomyosarcoma and lymphosarcoma and I put reticulum cell sarcoma first and leiomyosarcoma second.

Dr. John H. Moon: Dr. Frable will present the pathology.

Pathological Discussion

Dr. William J. Frable: This is the gross specimen, resected at surgery, opened up to show the tumor which corresponds well to the x-ray picture. There were three ulcerations on x-ray and there are three ulcerations in the specimen (Figure 2). The mu-



Fig. 2. Gross specimen demonstrating ulceration of leiomyoma.

cosa is smooth over this lesion. There is an extragastric portion to this tumor behind the main mass which was calcified. The lesion is about 5-6 cm in diameter. This tumor lay on the posterior wall in the mid-portion of the stomach, closer to the lesser curvature.

The cut surface of the lesion has a variegated appearance with some areas of hemorrhage and necrosis. Microscopically this is a leiomyoma. It has venous and arteriole sinuses. This is the reason for bleeding—there is ulceration.

One can do special stains to prove that it is a leiomyoma of the stomach. You can show the presence of myofibriles. The cells are fairly uniform with practically no mitotic figures identified.

Certain areas of this had a very pale character to the tumor cells. Cut in cross section, there is a similarity to a peripheral nerve. This is not an uncommon finding in smooth muscle tumors of the stomach and has lead to the diagnosis in some cases of neurofibroma or neurilemoma. It can be shown again by special stains and by histochemistry and by electron microscopy that almost all of these lesions are smooth muscle origin no matter what they look like under light microscopy.

Dr. Harrison has reviewed most of the facts concerning leiomyomas and leiomyosarcomas. As indicated, they occur in autopsy series in anywhere from 16-30% of patients. The vast majority of these are small, asymptomatic and it is not a particularly common surgical problem, or clinical problem. The MCV experience amounts in 19 years to only 30 leiomyomas and about 10 leiomyosarcomas.[2]

The most severe complications are hemorrhage from the ulceration and degeneration due to hemorrhage, and necrosis which may make the pathologic interpretation difficult and cause a false diagnosis of sarcoma.

In a large review series, the age range of these tumors is quite broad, but about 85% of the cases occurred in the range between 30 and 70 years. As to the differential in ages between leiomyomas and leiomyosarcomas, there is none; they completely overlap both in age range and in predominant

decade of incidence which is usually the fifth decade.

About half of the cases will occur somewhere in the body of the stomach both for leiomyoma and leiomyosarcoma. There is a predominance of leiomyosarcomas in the male population, about 2:1. Leiomyomas are equally divided between males and females.

The MCV experience has indicated of the 10 leiomyosarcomas, half of the patients have died of their tumor; there was one postoperative death; and the other four patients have been lost to follow-up.

This is a gross of a leiomyosarcoma of the stomach and about the only thing that one can say about it is that it is bigger. This is an important gross differential if it can be made at surgery, but a very difficult one. The best clue maybe infiltrative or invasive character of the tumor or the attachment to adjacent structures. This is not usually true of the leiomyoma.

Microscopically, a good leiomyosarcoma is a much more cellular tumor. Those of us in pathology who have to make the differential on borderline lesions of leiomyoma vs leiomyosarcoma ultimately count mitotic figures. When you see a significant number of mitotic figures in even a well-differentiated leiomyoma, it is probably a leiomyosarcoma.

The other differential diagnosis of smooth muscle tumors of the stomach is a lesion with a very epithelial character. The tumor cells are vacuolated. They occur in cords or clumps very much like an epithelial tumor. That is, however, a gastric wall tumor which can be shown by enzyme studies, by electron microscopy to be derived from smooth muscle. These are called either bizarre leiomyoma or leiomyoblastoma after Dr. Stout who described this tumor.[3] It is very hard to believe, I am sure, that this is a smooth muscle tumor, but it is. It behaves in a benign fashion. One has to be aware of this lesion so as not to confuse it with a carcinoma of the stomach or some type of sarcoma.

Are there any questions?

Dr. Moon: Could you comment on these squared-off nuclei you are always showing? Some were shown at the Medical Death Conference the other day. Apparently in myocardial fibers, it just means muscular hypertrophy. What does it mean here?

Dr. Frable: It means in gastrointestinal tumors that the differential is either between fibrous tumors—fibrosarcoma or fibroma—and smooth muscle—leiomyoma and leiomyosarcoma. Fibrocyte nuclei are pointed on the ends whereas smooth muscle nuclei are blunted or rounded. It doesn't always work, but it is one of those "pathologic gimmicks" that we use.

Dr. Moon: To answer one of Dr. Harrison's questions, that statement in the protocol "following improvement in her clinical condition" relates to an additional three blood transfusions. Do you care to make any comments in closing?

Dr. Harrison: No, I have no comments.

Final Anatomical Diagnosis

Leiomyoma of the stomach.

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Cancer Trends....

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Cancer of the Rectum

By applying the knowledge and surgical techniques that science now possesses, it should be theoretically possible to effect cures in almost all cancers of the rectum. Yet, the cruel fact remains that each year in the United States alone forty-five thousand people die of colorectal cancer. This is roughly 15% of all cancer deaths. It has been realistically stated that the ultimate fate of the patient having rectal cancer depends upon his management by the first doctor consulted. Much has been done to educate the public in recognition of the signs of cancer; never-the-less, it is tragically true that when first seen by the surgeon, far too many patients already have advanced and incurable cancer. Modern medicine stands indicted, and the tragedy infinitely compounded, by the failure of the first physician consulted to suspect cancer, confirming or eliminating its existence by careful rectal examination, before prescribing for more obvious conditions.

It is believed that rectal cancer must begin as a small localized growth, which with the passage of time tends to grow larger, spreading to adjacent structures and invading blood vessels and lymph channels whereby cancer cells are transported to distant sites and their implantation produces satellite cancers. Localized cancer is readily curable by surgical excision, but regrettably we must concede that disseminated cancer is too often fatal regardless of treatment. Thus, time is vitally important, and the key to success in therapy is an early diagnosis followed promptly by adequate surgery.

The well known symptoms of rectal cancer might perhaps best be forgotten, for the early lesions we must seek will produce few if any symptoms at all, yet will be discernible by examination. Many benign rectal diseases will produce some bleeding, yet it is imperative that any bleeding whatsoever must arouse the alert physician's awareness of the possibility of the coexistence of cancer with such obvious bleeding sources as hemorrhoids or fissures. By careful questioning, it is frequently possible to establish diagnostically important differences in the appearance and manner of blood loss from various lesions, but this is not entirely reliable, and should never relieve the physician of the responsibility for a painstaking examination in every case.

Consideration of age may be statistically helpful. While rectal cancer can occur at any age, it is most frequently found in patients aged 40 years or over, with the highest incidence in the sixth decade of life. The rectum is far more accessible for direct examination than either the stomach or lung. Rectal cancer is usually detected in one of three ways; by digital palpation, proctosigmoidoscopy or barium enema x-ray study. Digital palpation requires no preparation or special equipment, and can easily be done by any physician. By simple digital examination alone, vastly important information can be gained as to the location, size and extent of the lesion, its mobility or fixation, degree of ulceration and obstruction to the lumen, and the involvement of other structures. It has been estimated that approximately 50% of all colorectal cancers are within reach of the examining finger, and

Sponsored by the Professional Education Committee, Virginia Division, American Cancer Society.

75% can be found by use of the standard 25 cm. (10 inch) proctosigmoidoscope. This, of course, would include not only the rectum, but the lower sigmoid as well. Full passage of this instrument is not always easy, even in experienced hands, and the use of force is painful, dangerous and unwise. Through the scope the health of the mucosa is determined by direct inspection, and suspicious lesions can be painlessly biopsied.

It has been frequently demonstrated that both cancer and benign polyps occur most frequently in the terminal portion of the bowel, where they are fortunately most accessible. There is appealing evidence that cancers may originate through the malignant degeneration of a previously benign polyp. It is generally agreed that when discovered all polyps should be removed, or electrically destroyed, and usually this can be done through the sigmoidoscope with minimal risk. The possibility of cancer prevention by elimination of a pre-malignant polyp is an intriguing speculation.

Reliance must be placed on barium enema x-ray study for the discovery of lesions beyond the range of the sigmoidoscope. Since x-ray is not entirely reliable in the diagnosis of pelvic lesions, x-ray and proctosigmoidoscopy complement each other, and for thorough study of the large bowel both modalities should be employed.

In summary, it appears reasonable that the deplorably large number of deaths from rectal cancer could be substantially reduced by an increased alertness to the possibility of the existence of cancer by all practitioners, and the prompt use of long established and relatively simple diagnostic procedures. Delay may mean death!

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Comment

This paper properly emphasizes the importance of early detection as the most effective method of decreasing the death rate from cancer of the rectum. The lesion that is confined to the mucosa of the bowel is "curable" by surgical resection in almost every case while the prognosis worsens with invasion of the wall, and is considerably worse when there are metastases to the regional lymph nodes (30% five year survival). Certainly a high index of suspicion and the complete evaluation outlined by Dr. Terrell are mandatory.

If we are to pick up early asymptomatic carcinomas of the rectum, proctosigmoidoscopy is probably a necessary part of the routine physical examination in the patient over 40 years of age. Only 12 to 15 per cent of asymptomatic colorectal cancers are palpable by digital rectal examination whereas 70 per cent are within 25 cm of the anus, the range of the proctosigmoidoscope.

Recently a technic employing multiple fecal blood testing utilizing commercially available guaiac impregnated slides has been described.[1] This test was used in addition to a thorough history and physical examination including a digital rectal examination and proctosigmoidoscopy. All patients who had at least one stool smear positive for occult blood were referred for barium enema. Obviously this simple, inexpensive technic is used as a detection method for colonic lesions above the reach of the proctosigmoidoscope. It is deserving of widespread application.

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The Editors

Diagnostic Laboratory Medicine....

G. K. LIMBER, M.D.

Histocompatibility Testing

The histocompatibility antigens are a part of the most complex immunogentic system known in man. Figure 1 summarizes in schematic form the present state of knowledge concerning these antigens and the location of their genes on the chromosomes.[1] The nomenclature used was adopted by the World Health Organization. Prior to the existence of this nomenclature, each investigator had his own designations for the various antigens that he had identified. It was found that many of these antigens, reported by different laboratories, were identical. The new nomenclature gives these antigens a designation in common and provides for the addition of antigens yet to be characterized.

Figure 1[1]:

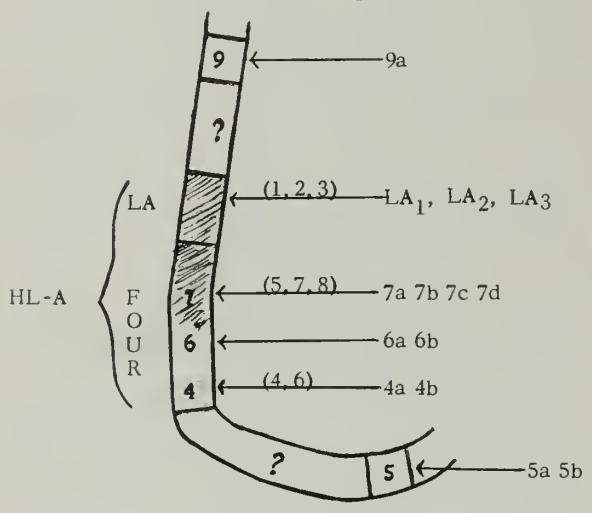


Fig. 1[1]. The HL-A system is located in a small section of the chromosome. Sub-loci may exist at the HL-A locus (4, 6, 7, 8) and are arranged in numerical order. Groups 5 and 9 are located at loci removed from the HL-A locus. Cytotoxicity best measures those antigens in the shaded areas. Leukoagglutination is better for antigens 5a, 5b, 9a, and the rest of HL-A antigens. The designations enclosed in parentheses correspond to the new official nomenclature of the World Health Organization whereby LA_1=HL-A1, LA_2=HL-A2, LA_3=HL-A3, 4a=HL-A4, Dausset 5=HL-A5, 4b=HL-A6, 7c=HL-A7, and 7d=HL-A8.

The majority of the important genes for tissue antigens are located near each other in the HL-A sector of the chromosome.[1] Two other important areas are the 9-locus, situated some distance from HL-A, and the 5-locus still further away—if not on another chromosome. Within each of these loci are sub-loci (four and LA) and sub-sub loci each controlling the expression of a certain antigen on the cell surface. There are probably more loci controlling the production of hitherto undetected antigens. When expressed, the antigen is present on the cells of most organs including heart, liver, lung, kidney, spleen, skin, white cells, and platelets.[2,3]

Autologous tissue antigens are normally recognized by the body as "self", but antigens from potentially harmful sources e.g. bacteria, viruses, transplanted organs, and sometimes the products of conception are recognized as "foreign". It is unlikely, as Ceppellini pointed out, that tissue antigens are present "due to an *a priori* hostility of Nature against transplantation surgeons".[1] Currently, "tissue" antibodies are thought to play a role in the early detection and control of malignancy. Conceivably, malignant cells arising from random mutations in tissues with a rapid turnover rate could be recognized as "foreign" due to a change in their membrane antigen makeup[4] and be eliminated by the reticuloendothelial system.[1]

The initial rejection of "foreign" tissues is dependent upon the stimulation of the recipient's immunological mechanisms. Transplantation antigens may be carried through lymphatics to the drainage lymph nodes where they stimulate the production

of immunologically committed lymphocytes.[5] Alternatively, lymphocytes circulating in the blood may become committed as they pass through the "foreign" tissue.[6] The rejection of "foreign" tissue appears to be mediated through a cellular type of mechanism. While humoral antibodies are produced, their role is as yet uncertain.[7]

The survival of both the corneal graft and the products of conception is partially the result of the almost complete isolation of the graft from the lymphatic drainage and blood supply of the host. The cornea is avascular and better protected from the cellular rejection process. On the other hand, the fetus is not as effectively isolated. Immunization of the mother by fetal red cells does occur and may produce damage in the fetus due to humoral antibodies (erythroblastosis fetalis). Mothers also are capable of producing antibodies to the fetal transplantation antigens.[8] Surprisingly, the fetus is rarely seriously affected. It has been shown that the entry of fetal lymphocytes into the maternal circulation occurs regularly from as early as the 14th week of gestation.[9] This transfer is thought to be responsible for the development by the mother of partial immunological tolerance to the fetus. The acceptance by the mother of the antigens present on the chorion is, however, still a mystery. Perhaps, the increase in corticosteroids during pregnancy plays a role here.

White cells bear transplantation antigens in common with tissues,[2] therefore, they are amenable to use as indicators of histocompatibility between donor and recipient pairs. The multitude of potent antigens present on leukocytes most often results in the production of antibodies of various specificities in response to sensitization (e.g. transfusion).[10] Thus, the detection of monospecific sera and the identification of antigens present on white cells has been a difficult job.

The first step in the resolution of this problem came with the discovery of specific typing sera which recognized but one antigen. Pregnancy produces immunization against antigens present in the father but not in the mother, and, unlike transfusion, may result in the production of monospecific sera. J. J. Van Rood[11] tested 67 random white cell suspensions against 100 sera obtained from multiparous women. He was able to determine by computer analysis which of the sera detected a single antigen. By this technique several of the transplantation antigens were recognized and a method for the identification of monospecific typing sera became available. Histocompatibility testing is now a reproducible and useful tool in determining the suitability of a donor for a particular recipient.

Histocompatibility is usually tested by the cytotoxicity method.[12] In general, this method consists of the incubation of donor or recipient white cells with known antisera in the presence of complement. After the incubation period, trypan blue, which is taken up by dead cells, is introduced. If more than 35% of the cells are killed, the antigen corresponding to the antibody in the testing serum is present on the cells. The antigens commonly tested for are the HL-A antigens 1 through 8. Donor and recipient are considered identical if the donor shares all antigens in common with the recipient. On the other hand, compatibility is present when the recipient has antigens which are lacking in the donor. The reverse situation is reason for the rejection of the prospective donor. In addition to the typing of antigens present on the white cells, a direct crossmatch should be carried out in which the donor cells are incubated with the recipient's serum. Any significant cell death is cause for donor rejection as it has been associated with hyperacute graft rejection.[13]

Van Rood[1] has found that identity of HL-A antigens in donor and recipient can greatly improve the survival of renal homografts. In addition, more detailed leukocyte grouping can improve the prognosis of transplant patients only when HL-A identity exists.[14,15] Complete identity in unrelated donor

and recipient pairs requires a large population of potential donors such as is available through the cooperation of histocompatibility testing laboratories existing in the eastern United States, or by organizations such as Eurotransplant.[1,16] Computers are utilized for the storage of tissue type information for potential transplant recipients. Whenever a donor becomes available, his tissue type is matched by computer to the best possible recipient.

In addition to the selection of suitable transplant pairs, the detection of leukocyte antigens and their corresponding antibodies is useful because of the association of these antibodies with several disease states. The leukoagglutination test[17] is usually employed to detect leukocyte iso-antibodies (leukoagglutinins). Briefly, this test is conducted by incubating a leukocyte suspension with the serum suspected of containing leukoagglutinins. If leukocyte antibodies are present, microscopic examination of the leukocyte-serum mixture will reveal leukocyte clumps or agglutination. The size and number of such clumps are used in grading the result on a 1+ to 4+ scale.

Leukocyte antibodies of various types are found in association with a number of diseases. Most commonly, however, they are found in the sera of multiparous women, in polytransfused patients, or in recipients of homografts. It has been demonstrated that 50% of patients receiving over 25 transfusions will show antileukocytic activity in their serum.[18] These patients may readily experience febrile transfusion reactions if given whole blood. If transfusion is needed in patients such as this, the administration of leukocyte-poor blood will ameliorate or entirely eliminate the febrile reaction. Organ transplant patients also receive leukocyte-poor blood transfusions to minimize their exposure and sensitization to "foreign" tissue antigens and to prevent graft versus host reactions.

Table 1 shows a list of the disease states reported to have been associated with leukocyte antibodies. The antibodies are further classified as to their type. This table has been adapted from "Leukocyte Antigens and Antibodies" by R. L. Wolford.[18] In adapting the table, the incidence of leukocyte antibodies reported as of 1960 has been left unchanged, but only selected references are included here. The numerators refer to the total number of sera shown to contain antibodies while the denominators refer to the numbers of sera tested. Here, we must reiterate that leukocyte antibodies may occur in any patient, irrespective of diagnosis, who has received multiple transfusions. In addition, it must be understood that leukocyte antibodies rarely occur in an untransfused patient. Therefore, since most of the diseases listed require transfusion in their therapy, the majority of the data is of questionable significance. In the case of autoimmune antinuclear leukoagglutinins, such as occur with lupus erythematosus and rheumatoid disease, the data are probably meaningful.[18] The incidence of antibody formation in association with these diseases is higher than with most of those listed. In addition, the need for transfusion in these patients is less than in many of the other diseases shown. Therefore, the autoantibodies produced are probably the result of the disease process and are not related to pregnancy or transfusion. The role of leukocyte antibodies is not clearly understood. The controversies which exist are many and their complete discussion is beyond the scope of this article. For further information, pertinent references are provided recommending particularly the reviews by Lalezari[35] and Wolford.[18]

Summary

Various aspects of the histocompatibility antigens and the means for their detection have been discussed. There is great potential usefulness of these techniques in the clarification of immune mechanisms, as well as the etiology of diseases associated with leukocyte antibody production. The devel-

Diagnosis	Agglutinins	Lysins	Complement Fixing Antibodies	Precipitins	Phagocytosis Inhibitors	Incomplete Antibodies (AGH consumption)	References
Neoplasm and Related Conditions							
Leukemia, type unspecified	4/24		5/10	8/54	1/1	0/5	19–21
Acute lymphatic leukemia	2/22						22
Acute myeloid leukemia	4/21		3/13	7/14			22,23
Monocytic leukemia	5/12						20,22
Chronic lymphatic leukemia	6/41		0/3	0/3			19,20,22
Chronic myeloid leukemia	13/54		6/21	0/6			19,20,23,24
Lymphosarcoma	0/26					2/31	22
Hodgkin's Disease	2/11	5/13	0/15				19,23,25
Multiple myeloma	0/4						22
Macroglobulinemia and other paraproteinemias							
Connective Tissue Diseases							
Lupus erythematosus	16/28				18/20	36/37	26–28
Rheumatoid disease	18/186						27
Felty's syndrome	3/4	3/3	2/2			2/3	19,25,27
Pancytopenias and Related							
Leukopenia, unspecified	80/291		5/15		0/1	30/84	22,23,24,29
Idiopathic pancytopenia or neutropenia	22/59	0/5	1/11		1/1	23/47	19,22,30
Agranulocytosis, aplasia, myelofibrosis	11/47	3/3	1/7		1/1	5/8	19,22,31–33
Splenic neutropenia and Banti's disease	1/9	12/18					25
Cyclic or intermittent neutropenia	5/11						34
Acquired hemolytic anemia	7/16						22
Idiopathic thrombocytopenic purpura	10/107	1/1					22
Paroxysmal noctural hemoglobinuria	7/12						22

ment of methods for the induction of immunological tolerance in homograft recipients may, in time, diminish the usefulness of extensive leukocyte typing in organ transplantation.[1] The application and improvement of immunosuppression may have a similar effect. However, prolonged immunosuppression must be balanced against the possibility of its untoward effects.

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Public Health . . . .

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Looking in on Medicaid

Few are aware of the extensive involvement of physicians and medical providers in the planning and management of Virginia's Medical Assistance Program (Medicaid) which came into being on July 1, 1969. Since 1966 the Governor's Advisory Committee has charted the program's course. This is the same Ad Hoc Committee first appointed in 1965 to consider the Medicare and Medicaid amendments to the Social Security Act.

Most issues are dealt with through specialty subcommittees which expand the representation of the Advisory Committee beyond its thirteen members. Subcommittees report directly to the Advisory Committee which makes the final decisions.

On February 4, 1970, the Advisory Committee met and the following is a summary of the reports heard, embracing the first six months of the new program.

Report from the Administrative Staff of the Medical Assistance Program

Dr. J. B. Kenley announced that phase two of the program, coverage for the "medically needy", began on January 1, 1970. During the first month approximately 10,000 "medically needy" persons were enrolled. He emphasized that to be eligible for Medicaid persons have to meet the non-financial requirements of one of the federal assistance categories (Table 1). The only exception is foster children of the local welfare departments who are considered a special group in the State plan.

Miss Betty Jo Wright emphasized that the "categorically needy" covered by Medicaid since July 1969 are people unable to meet the expenses of food, clothing and shelter and, therefore, are recipients of money assistance. "Medically needy" persons have income sufficient for these daily needs but are not able to meet large medical expenses. With regards to income requirements for eligibility as "medically needy", a single person with annual income of $1,700 or less would be eligible for medical assistance if the categorical requirements are met (the income level is $2,200 for two persons, plus $400 for each additional eligible person in the family). Persons with large medical expenses but with income above these levels may become eligible if they incur medical expenses equal to their excess income.

Mr. Cardwell asked Miss Wright if liens were required on the homes of "medically needy" recipients. She explained that this was not necessary. Also, liquid assets, such

TABLE 1

NON-FINANCIAL REQUIREMENTS OF THE FOUR FEDERAL ASSISTANCE CATEGORIES WHICH MUST BE MET FOR MEDICAL ASSISTANCE ELIGIBILITY.

OLD AGE ASSISTANCE (OAA)

Must have attained the age of 65.

AID TO THE PERMANENTLY AND TOTALLY DISABLED (APTD)

1. Must be between the ages of eighteen and sixty-four years;
2. Must be permanently and totally disabled. Permanent and total disability is determined by the State Review Team (Welfare).

AID TO THE BLIND (AB)

Must have, with correcting glasses, twenty-two hundreds vision or less in the better eye.

AID TO DEPENDENT CHILDREN (AFDC)

1. Is a child under the age of 18 or, if between 18 and 21, must be attending school or engaged in a training program;
2. Is living in the home of a relative of a specified degree (parent, grandparent, sister, brother, uncle, aunt, niece, nephew, or first cousin);
3. Is deprived of parental support or care by reason of:
   a. death of a parent
   b. continued absence of a parent from the home
   c. physical or mental incapacity of a parent.

as money in the bank, up to $600 for one person, and insurance policies up to $5,000 face value are not considered in determining eligibility. Miss Wright reminded the group that the local welfare departments were responsible for determining Medicaid eligibility.

She reported that a total of 137,779 persons were enrolled in the program on February 1st, a 34 per cent increase in the seven months since July 1st. Original projections for this period were for under 100,000! Like elsewhere in the country, Virginia's welfare rolls have increased greatly in the last year, mainly in the AFDC and OAA categories. Medicaid has enrolled over 200,000 individuals in this seven month period, emphasizing the considerable turn-over. Dr. Nelson inquired why persons move out of the program and Miss Wright explained this to be due mainly to financial reasons affecting eligibility, deaths, moving out of state, and the finding of jobs.

Mr. Vance Long reported on the numbers of providers participating in Medicaid (Tables 2 and 3). From 15 to 20 providers are still being enrolled each week. He mentioned that 33 physicians had resigned from the program and the main reason cited for withdrawal was the paper work involved. Since the initiation of the new phase of the program there have been few questions from providers.

Mr. Herbert Oglesby gave a brief expenditure report for the first six months of service to the "categorically needy" group (Table 4). He pointed out that hospital expenses were exceeding expectations, even considering that in the first six months of a new program actual expenditures are expected to be considerably less due to a lag-time in billing. Total expenditures are well within budgeted amounts. Mr. Truman Stephens reported that the Governor's Budget request for the 1970-72 biennium included $158,851,855 for the Medicaid Program, very close to the amount requested by the Health Department. Of this amount, approximately 65 per cent would be paid by the federal government.

Mr. Stephens emphasized the opportunity for studying patterns of obtaining medical care made possible by the comprehensive nature of Virginia's program. He reviewed selected service statistics for the month of December 1969, as shown in Table 5. He noted that services were purchased for 33,614 recipients in that month, approximately 25 per cent of the number enrolled at that time. On the basis of data for this one

TABLE 2

PARTICIPATING PROVIDERS IN THE MEDICAL ASSISTANCE PROGRAM, JANUARY 1970.

	Number to Whom Agreements Mailed in April 1969	Number Currently Enrolled	Per Cent
Pharmacies	975	896	91%
Hospitals	206	144	69%
Nursing Homes	83	63	75%
Physicians	4,000*	2,528	63%
Oral Surgeons	35	24	68%
Laboratories	48	25	52%
Home Health Agencies	138	138	100%
Health Department General Medical Clinics	15	15	100%
Optometrists	280	254	90%
Opticians	270	104	38%
Ambulance Services	179	91	51%
Podiatrists	58	16	27%
Ortho-Prosthetists	53	53	100%
Providers of Medical Equipment and Supplies	889	591	66%

*The approximate number actually in practice.

TABLE 3

PHYSICIANS LICENSED AND REGISTERED IN THE COMMONWEALTH OF VIRGINIA PARTICIPATING IN THE MEDICAL ASSISTANCE PROGRAM, JANUARY 15, 1970.

Counties	Licensed	Participating	% of Licensed Physicians Participating
Accomack	14	9	64%
Albemarle	8	6	75%
Alleghany	See Clifton Forge and Covington		
Amelia	2	2	100%
Amherst	8	4	50%
Appomattox	3	3	100%
Arlington	265	54	20%
Augusta	15	6	40%
Bath	7	2	28%
Bedford	2	1	50%
Bland	1	1	100%
Botetourt	6	5	83%
Brunswick	5	4	80%
Buchanan	9	9	100%
Buckingham	3	2	66%
Campbell	9	8	88%
Caroline	4	3	75%
Carroll	4	3	75%
Charles City	2	0	0%
Charlotte	4	4	100%
Chesterfield	16	3	19%
Clarke	5	5	100%
Craig	1	0	0%
Culpeper	14	12	85%
Cumberland	1	1	100%
Dickenson	4	5	125%*
Dinwiddie	3	2	66%
Essex	6	4	66%
Fairfax	117	66	56%
Fauquier	21	16	76%
Floyd	2	1	50%
Fluvanna	3	2	66%
Franklin	10	4	40%
Frederick	6	1	16%
Giles	9	11	120%*
Gloucester	6	4	66%
Goochland	3	3	100%
Grayson	21	5	23%
Greene	1	1	100%
Greensville	14	14	100%
Halifax	8	5	62%
Hanover	16	8	50%
Henrico	13	6	46%
Henry	5	3	60%
Highland	1	1	100%
Isle of Wight	4	3	75%
James City	2	1	50%
King George	1	1	100%
King and Queen	No Doctors in This County		
King William	5	4	80%
Lancaster	8	4	50%
Lee	8	7	87%
Loudoun	33	23	69%
Louisa	5	4	80%
Lunenburg	3	4	133%*
Madison	3	2	66%
Mathews	7	5	71%
Mecklenburg	18	13	72%
Middlesex	4	4	100%
Montgomery	23	7	30%
Nansemond	4	3	75%
Nelson	3	3	100%
New Kent	1	1	100%
Northampton	15	16	106%*
Northumberland	5	4	80%
Nottoway	9	5	55%
Orange	8	6	75%
Page	6	6	100%
Patrick	7	8	114%*
Pittsylvania	5	3	60%
Powhatan	1	1	100%

TABLE 3—Continued

Counties	Licensed	Participating	% of Licensed Physicians Participating
Prince Edward	13	11	84%
Prince George	See Hopewell		
Prince William	43	36	83%
Pulaski	21	13	61%
Rappahannock	1	1	100%
Richmond	3	2	66%
Roanoke	7	3	43%
Rockbridge	4	3	75%
Rockingham	13	12	92%
Russell	6	5	83%
Scott	6	5	83%
Shenandoah	17	15	88%
Smyth	27	18	66%
Southampton	5	2	40%
Spotsylvania	See Fredericksburg		
Stafford	2	0	0%
Surry	1	1	100%
Sussex	4	3	75%
Tazewell	30	24	80%
Warren	11	11	100%
Washington	24	18	75%
Westmoreland	9	6	66%
Wise	30	27	90%
Wythe	14	10	71%
York	8	3	37%
Cities			
Alexandria	241	87	36%
Bedford	12	6	59%
Bristol	12	6	50%
Buena Vista	3	2	66%
Charlottesville	271	106	39%
Chesapeake	21	15	71%
Clifton Forge	20	19	95%
Colonial Heights	9	3	33%
Covington	17	11	64%
Danville	72	51	70%
Fairfax	86	30	35%
Falls Church	143	63	44%
Franklin	16	17	106%*
Fredericksburg	45	44	97%
Galax	16	13	81%
Hampton	78	36	46%
Harrisonburg	49	38	77%
Hopewell	21	10	47%
Lexington	16	12	75%
Lynchburg	128	85	66%
Martinsville	48	26	54%
Newport News	143	119	83%
Norfolk	344	194	56%
Norton	16	13	81%
Petersburg	87	62	71%
Portsmouth	120	38	32%
Radford	35	17	48%
Richmond	913	364	39%
Roanoke	236	125	52%
Salem	21	8	38%
South Boston	23	18	78%
Staunton	41	18	43%
Suffolk	33	30	90%
Virginia Beach	91	61	67%
Waynesboro	33	31	93%
Williamsburg	37	16	43%
Winchester	78	58	74%
TOTALS	4736	2528	53%

*This high percentage no doubt is due to movement of physicians into the area since the base number of physicians was determined.

month the frequency of physician visits can be projected to approximately one-half of the national average of six visits per year. Mr. Stephens said that the average stay in general hospitals for Medicaid recipients exceeds 13 days (national average 8.1). It was pointed out in the discussion of this data that the Medicaid population differs considerably from the overall population of Virginia, with a much higher percentage of aged, blind, and disabled.

Mr. Tuttle asked if statistics were available showing the average length of stay of illness. Dr. Edwin Brown indicated that a beginning had been made in the examination of length of hospital stay for selected procedures. Table 6 was presented as an example of such early findings. The usefulness of such comparative data was discussed. Dr. Grossmann suggested that on-site visits be made to hospitals and other providers with utilization patterns that appear unusual. Dr. Brown pointed out that invoice processing at Blue Cross/Blue Shield (the program's fiscal agent) is fully automated and that the system is designed to capture essentially all the data recorded on each invoice. The Health Department receives detailed performance report printouts from the computer each month, these having been designed to facilitate identification of service patterns which are unusual. Through analysis of this data, certain providers will be identified for detailed inquiry

TABLE 4

EXPENDITURES FOR CATEGORICALLY NEEDY RECIPIENTS, JULY–DECEMBER 1969, MEDICAL ASSISTANCE PROGRAM.

Medical Services	Cumulative Expenditures (Thru December 31, 1969)	Estimated Total (July 69-June 70)*
Hospitals	$ 3,521,214	$ 5,792,000
Nursing Homes	2,386,555	10,021,000
Physicians	1,225,005	6,731,000
Out-Patient Clinics	798,406	791,000
Pharmacy	1,132,588	4,752,000
Special Services	336,213	1,066,000
Part B Medicare Premiums	405,023	594,000
Laboratories	9,447	1,066,000
Home Health Services	18,214	140,000
Other	14,617	300,000
TOTALS	$ 9,847,282	$31,253,000

*Does not include estimates for medically needy, January-June 1970.

TABLE 5

COVERED MEDICAL SERVICES PURCHASED IN DECEMBER 1969, AND THE NUMBERS OF PERSONS SERVED.

Medical Services	Amount of Service	Number of Persons Served*	Averages
In-Patient Hospital days (Excluding TB and Mental Hospitals)	25,356	1,859	13.6 days/patient
Skilled Nursing Home days	31,631	1,159	27.3 days/patient
Clinic visits	10,955	7,484	1.5 visits/patient
Practitioner visits	29,807	9,597	3.1 visits/patient
Pharmacy prescriptions	68,852	22,224	3.1 prescriptions/patient
All other services		2,502	

*Persons receiving more than one type of service are counted more than once. The total number of persons receiving one or more services is 33,614.

regarding services provided to Medicaid recipients.

Dr. Mack Shanholtz stated that it was the intent of the Health Department to be involved in the medical care scene far beyond the paying of medical bills. He noted that while Medicare has limited surveillance activity on the local level, Medicaid has freedom to talk to providers and seek to understand the medical care patterns as they exist. Dr. Nelson suggested joint meetings of those administering Medicare and Medicaid.

TABLE 6

AVERAGE LENGTH OF HOSPITAL STAY FOR NORMAL DELIVERIES AND TONSILLECTOMIES—SELECTED HOSPITALS IN THE MEDICAL ASSISTANCE PROGRAM—DECEMBER 1969.

	Delivery (Normal)			Tonsillectomy		
Hospital	Cases	Days	Average Stay	Cases	Days	Average Stay
A	104	284	2.7	2	4	2.0
B	9	30	3.3	5	9	1.8
C	32	100	3.2	10	11	1.1
D	1	3	3.0	24	112	4.6
E	215	770	3.6	30	87	2.9
F	13	42	3.3	2	4	2.0
G	35	120	3.4	40	90	2.3
SAMPLE TOTAL	409	1,349	3.3 days	113	317	2.8 days

Report of Subcommittee on Physician's Claims

Membership: Mr. John L. Tuttle, Chairman; Mr. Charles P. Cardwell, Jr.; and Dr. A. Epes Harris, Jr.

Mr. Tuttle stated that the subcommittee on physician's claims had met on two occasions and had reached the conclusion that the current physician claim procedures should remain essentially unchanged. It was noted that the rejection rate at the onset of the program had been about 36 per cent, but now that the forms are familiar and better understood the rejection rate is under five per cent. This is considered to be remarkable since the rejection rate for the current Blue Shield form, which has been in use longer, is somewhat higher. Mr. Robert Hughes of Blue Cross/Blue Shield mentioned that clerks given only minimum orientation on the preparation of Medicaid and Blue Shield forms were able to complete the Medicaid forms in less time. Also, Mr. Hughes noted that simplified listings of diagnostic and procedure codes are being made available to each individual specialty to assist in coding claim forms. The Committee's recommendations were accepted.

Report of Pharmacy Subcommittee

Membership: Mr. John L. Tuttle, Chairman; Mr. Harold Prather; Mr. Curtis J. Nottingham; Mr. Charles E. Morton; and Dr. Francis H. McMullan.

Mr. Tuttle reported that the subcommittee had met on two occasions with representatives of the Health Department and Blue Cross/Blue Shield to work out details of the inclusion of certain non-legend drugs as covered items by the program. Mr. James Teeter of Blue Cross/Blue Shield indicated that this phase of the program will be operable on May 1, 1970. The subcommittee recommended inclusion of eight drug classifications with the requirement that a drug be ordered by a physician. The program will be charged at over-the counter prices by the pharmacies.

Mr. Tuttle reported that Mr. Nottingham suggested at the subcommittee's January 26th meeting that the pharmacy subcommittee would benefit from being given

more detail with regard to pharmacy usage patterns evidenced by review of surveillance reports. He also suggested that the subcommittee could arrange for problems to be presented to a pharmacy peer group appointed by the Virginia Pharmaceutical Association. The recommendations of this subcommittee were accepted.

Report of the Psychiatric Subcommittee

Membership: Dr. James B. Funkhouser, Chairman; Dr. William F. Gibbs; Dr. Reuben B. Young; Dr. Joan M. Meiller; and Dr. David S. Sprague.

Dr. Funkhouser made a report on the first meeting of the Psychiatric Subcommittee. The following recommendations and conclusions were made by that subcommittee:

Psychiatric treatment, both inpatient and outpatient, should be covered by Medicaid, subject to further determinations of what services are to be covered and for how long.

The mental hygiene clinics operated by the Department of Mental Hygiene and Hospitals may be eligible for benefits under Medicaid after a careful cost accounting determines what part of the individual clinic budget is not supported by federal funds and after an estimate of what this participation would cost the program.

The subcommittee will continue to study availability of acceptable programs for emotionally disturbed children.

The subcommittee has decided to direct its attention to defining what constitutes medical treatment in psychiatry, the qualifications of those entitled to furnish such treatment, the limitations of the duration and extent of this treatment imposed by realistic financial and budgetary considerations, and what are reasonable fees for psychiatric services.

The Advisory Committee accepted Dr. Grossmann's motion that Dr. Funkhouser's report be accepted and that the committee be directed to continue to study the problems and report at a later date.

Report of Task Force on Dentistry in Medicaid

Membership: Dr. Jason R. Lewis, Chairman; Dr. Myron E. Henderson; Dr. Carlton E. Gregory; Dr. Alexander L. Martone; Dr. William H. Traynham, Jr.; Dr. A. G. Orphanidys; Dr. Byron M. John; Dr. Harry B. Fleming; Dr. Madison R. Price; Dr. Richard H. Meadows; Dr. Francis M. Foster; Dr. Hugh O. Wrenn; and Dr. Peter A. Triani.

Dr. Lewis explained that meetings had been held to discuss the role which dentistry should play in Medicaid. He stated the Virginia State Dental Association will explore how best to meet the needs of the indigent and will present a program within the next six months. Dr. Lewis said dentists are aware that Medicaid funds have not been budgeted for dental care. In the interim, in those areas where some indigent patients will not receive care, a "Hope" type program for a limited time might be sponsored by the Virginia State Dental Association and its various components. This program which would be in cooperation with the State Health Department and various auxiliary groups would undertake to furnish treatment to those indigent persons not receiving treatment. It is understood that some dental care is now available through most local health departments.

Report of Subcommittee on Clinic Physician Reimbursement

Members: Dr. Kinloch Nelson, Chairman; Dr. Claiborne Fitchett; Mr. Nelson L. St. Clair, Jr.; Dr. Walter S. Johnson; Dr. Michael A. Pears; Mr. Harry H. Munari; Mr. John L. Tuttle; Dr. A. Epes Harris, Jr.; Dr. David D. Stone; and Mr. John F. Harlan, Jr.

Dr. Nelson stated that his subcommittee has not had a recent meeting but is still studying the problem of how physicians working in hospital clinics should be reimbursed under Medicaid.

Members of the Governor's Advisory Committee on Medicaid

William Grossmann, M.D., Chairman; Alexander McCausland, M.D., Russell V. Buxton, M.D., Mr. Charles P. Cardwell, Jr., Mr. William H. King, Sr., Jason R. Lewis, D.D.S., Mr. Harley Duane, Mr. John L. Tuttle, Kinloch Nelson, M.D., Mr. Robert L. Gordon, A. Epes Harris, Jr., M.D., Mr. Harold Prather, Mr. J. Curtis Nottingham.

Ex Officio—Mr. Otis L. Brown, Hiram W. Davis, M.D., Mack I. Shanholtz, M.D.

The State Health Department's Staff for Medicaid

Dr. James B. Kenley, Director, Division of Medical and Hospital Services

Mr. Herbert Oglesby, Administrative Director, Division of Medical and Hospital Services

Mr. Truman Stephens, Program Analyst, Division of Medical and Hospital Services

Dr. Edwin M. Brown, Medical Director, Medical Assistance Program

Mr. Vance H. Long, Administrative Director, Medical Assistance Program

Miss Betty J. Wright, Medical Social Work Supervisor

Mr. M. O. Perkins, Program Supervisor (Provider Enrollment)

Mr. Philip Shaheen, Program Supervisor (Physicians)

Mr. Gary Hansen, Information Officer

Miss Mary V. Jenkins, Accountant-Office Manager

Mr. Bobby Carter, Program Representative (Nursing Homes and Hospitals)

Mr. J. E. Jones, Program Representative (Recipients)

Mr. Robert Hill, Program Representative (Pharmacies)

Mr. Robert Sandy, Program Representative (Special Services)

Mrs. Martha Gresham, Social Work Aide (Recipients-Welfare)

Mrs. Rosalyn Davis, Social Work Aide (Recipients-Welfare)

Monthly Report of Bureau of Communicable Disease Control

	Feb. 1970	Feb. 1969	Jan.-Feb. 1970	Jan.-Feb. 1969
Brucellosis	3	—	3	—
Diphtheria	—	—	—	—
Hepatitis	60	19	103	39
Meningitis (Aseptic)	1	1	1	2
Meningococcal Infections	3	13	7	20
Poliomyelitis	—	—	—	—
Rocky Mt. Spotted Fever	—	—	—	—
Rubella	123	41	192	49
Rubeola	103	104	202	167
Tularemia	—	—	—	—
Typhoid	1	—	1	—
Tularemia	—	—	—	—
Typhoid	1	—	1	—
Rabies in animals	34	80	62	127
Venereal Diseases				
Syphilis	111	139	201	226
Gonorrhea	1,049	1,007	2,055	1,871
Other	2	2	6	3

Mental Health . . . .

JAMES B. FUNKHOUSER, M.D.

A Partial Report on Drug Abuse in Virginia

It is apparent from the news media that the general public is alarmed about widespread drug addiction and drug abuse.

The problem may be impossible to define. No one seems willing or able to separate the case of a teenager who experimentally smokes Marijuana from the case of a Heroin addict who must steal because he has become addicted to narcotics. There are other problems of definition. For example: a distinction is seldom made between physiological dependence and psychological habituation. Many experts see no reason to make such distinction. There is a widespread presumption (not supported by expert opinion) that the occasional use of Marijuana will frequently lead to experimentation and hence to addiction to more dangerous drugs.

In general, the public appears to be more alarmed about the use of drugs by adolescents and teenagers than by adults. The medical profession (particularly in psychiatry) does not appear to be highly concerned about the teenagers.

Several years ago the Virginia Mental Health Study Commission report, after exploring all the facets of mental health in Virginia, made no mention whatsoever of drug addiction. At that time the Mental Hygiene Clinics in Virginia seldom reported a case in which drug addiction was a primary or even a secondary reason for referral to the clinic. At that time Virginia State Mental Hospitals showed very few admissions for drug addiction, per se.

FUNKHOUSER, JAMES B., M.D., *Assistant Commissioner, Department of Mental Hygiene and Hospitals.*

Approved for publication by the Commissioner, Department of Mental Hygiene and Hospital.

However, in the past two years there has been an explosion of reported cases. In certain areas of the State estimates are made, by those who handle delinquent and problem children, that from 40 to 80% of high school students have experimented with Marijuana.

Furthermore, there has been a definite increase in the number of cases of "hard" drug use reported by the Health, Education and Welfare officials and by the police.

A recent survey of the problem, as seen in the Mental Hygiene Clinics operated by the Department of Mental Hygiene and Hospitals, follows in some detail.

Each of the 32 Mental Hygiene Clinics administered by the Department was sent a questionnaire requesting a report on the number of patients seen with drug addiction or habituation.

The questionnaire covered a one year reporting period and was designed to group cases according to age. Listed specifically was the use of Marijuana, Opiates including Heroin, L.S.D., Amphetamines, Barbiturates and other Psychotropic drugs such as Miltown and Librium. The composite report of the reporting clinics showed expected findings such as the concentration of the problem in urban areas and the relative infrequence in rural areas. Accurate figures were not possible because of deficiencies in the design of the questionnaire and the inability or unwillingness of certain reporters to give more than estimated information.

There were 165 reported patients who had a problem with Marijuana. Only six of these were younger than 13, none was over 36 years of age. The highest incidence was in the age group from 14 to 20 after which age the use of Marijuana began to drop off sharply.

There were 66 reports of Heroin usage between the ages of 17 and 36 years of age. After 36 years of age, Heroin addicts apparently do not get referred to Mental Hygiene Clinics or there is a decline in its usage.

L.S.D. (acid) was reported for a total of 123 cases, only twice in those younger than 13, heavily clustered in the 17 to 20 age bracket with only one report in an individual over 36.

The use of Amphetamines (speed) was reported for a total of 128 cases, only three times in the ages under 13. The use of Amphetamines extended on up to the age bracket of 65 years of age and over.

Barbiturates were reported for a total of 75 cases, only four times in those younger than 13. The clustering began at age 26 and extended up to 66 years and older.

The Psychotropic drugs, such as Miltown and Librium, were not reported to be used by anybody under 13 years of age. There was a total of 50 reported cases. There was one case of a 14 year old. The heaviest concentration was in the ages 26 to 65, with only six cases reported in those 66 years of age and older.

Glue sniffing was reported only twice and only in children under 13.

It must be realized that this questionnaire was sent only to Public Mental Hygiene Clinics. These clinics deal with people who are having emotional and mental problems and disturbances sufficient to warrant their being referred. Such patients, for the most part, are individuals who cannot afford to see privately practicing psychiatrists.

It is not possible, therefore, to derive from these rough figures any real estimate of the abuse of drug use or of drug addiction in people who do not need to see a psychiatrist. It is assumed that a great many persons using drugs are not sufficiently troubled to be referred to a Mental Hygiene Clinic.

There are some unexplained artifacts in the survey just described which may or may not have significance. The City of Portsmouth had relatively a very low number reporting to the Mental Hygiene Clinic. The Greater Richmond Area was outstanding as being relatively free of the problem. On the other hand, Roanoke had more than the expected number of reported cases.

It is possible, and even probable, that drug abuse problems in Richmond and Portsmouth are referred for help to some other agency than the local Mental Hygiene Clinic. The survey confirmed that the problem in Virginia is concentrated in the Norfolk-Virginia Beach area and in Arlington, Alexandria and Fairfax.

Several explanations of why the drug problem has accelerated have been suggested. One is the so-called widening of the generation gap. Teenagers may use drugs to act in defiance of "The Establishment". Another contributing factor may be the publicity given by the press, radio and television about drugs in general. There is an increasing use of medically prescribed tranquilizers and stimulants. The teenager knows that the father and mother may take drugs to sleep or to keep awake, or drink cocktails to "get high" and sees no harm in doing the same.

In summary, a partial quotation from a letter written by the Mental Hygiene Clinic Director of one of our largest clinics seems appropriate:

"We have reviewed the Clinic experience during the past year concerning drug use. Even had we been able to go through the approximately 750 cases opened during the year for information about drug use, I do not know if we could give you specific quantitative information. At the present time, the feeling about drug use is such that as long as records are not fully protected by law, staff members are very cautious concerning the information they will record.

"On the basis of canvassing the staff for their experience, I think I can give you some useful information. Approximately 20% of the adolescent population, coming to the Center, present drug use as one of the problems. Unfortunately, the hysteria about



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Beef	8.0	Hot Dog Bean	8.4
Chicken Broth	5.5	Pepper Pot	6.1
Chicken 'N Dumplings	5.8	Split Pea with Ham	10.2
Chili Beef	6.2	Vegetable Beef	5.0
Green Pea	6.9	Vegetable with Beef (Frozen)	5.4

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We wish to thank Drs. Marcia K. Bilbao, Louis Frische, Josef Rösch and Charles T. Dotter for this exce tionally graphic example of hypotonic duodenograph

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Contraindications: Glaucoma, severe cardiac disease.

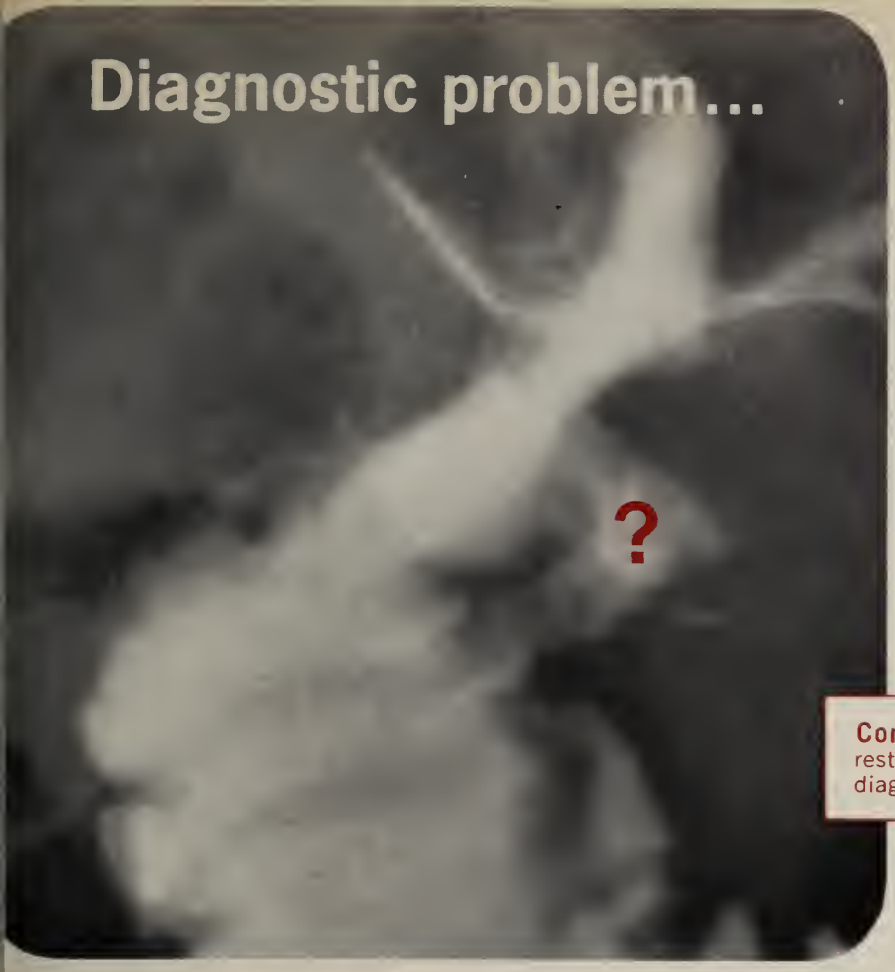
Precautions: Since varying degrees of urinary hesitancy may occur in elderly men with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

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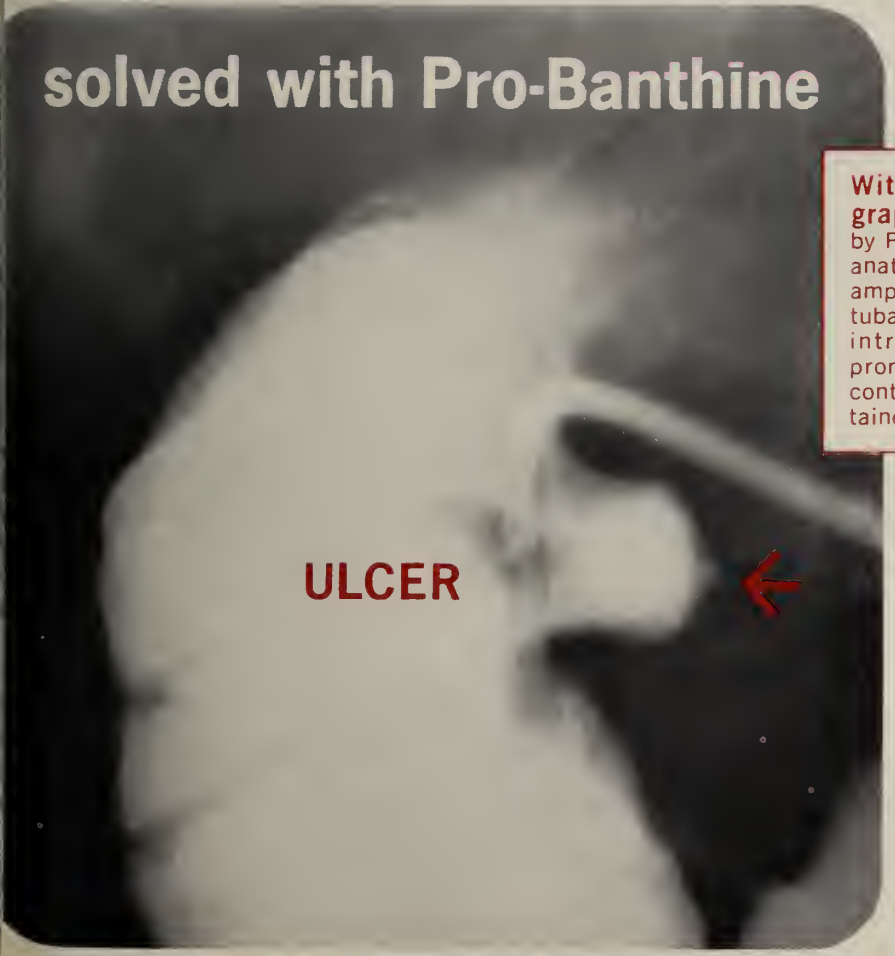
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Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
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drug use is so widespread that it is difficult to assess whether this simply means being caught while experimenting with marijuana the first time, or whether this means regular, debilitating use of opiates. Certainly, use among the population we see, particularly adolescents, is widespread. The staff estimates the range anywhere from 40 to 80% of those youth seen have had at least some experience with drugs, mostly marijuana. What is important to note, however, is that actual habituation or addiction is relatively low in this population. The youth seem to be able to drop the use when the drug is no longer readily available, or after a period of therapy when it is no longer needed, with very little difficulty."

It must be re-emphasized that the preceding report deals only with the problem of drug use and abuse as seen in public Mental Hygiene Clinics in Virginia. It does not purport to be a survey of the problem as seen by privately practicing physicians, school officials, parents, or law enforcement agencies.

Doctors Must Keep Their Licenses Active

Doctor, have you always carried out your annual registration by July 1 of each year? Do you depend on your secretary to do this? Do you realize that your registration must be completed in order for you to have a license to practice medicine? Do you confuse the annual registration with the State Board of Medical Examiners with the State professional license fee which you pay each year in January to the State of Virginia?

Ten years ago when the State Board office was moved to Portsmouth, there were about 600 doctors who were not carrying out the annual registration fee and were, therefore, after July 1, practicing medicine without a license. This situation received the diligent attention of the State Board office to such an extent that in the next two years we felt some assurance that all doctors were doing what they were supposed to do. We follow a certain routine in accomplishing this. We send the registration application to every doctor about April 15 of each year. We send a reminder to those who have not registered by June 10. In spite of this we find on July 1 a number of doctors who have not registered. We then send out what we call our "mean letter" to those not registered. Then we engage in all the detective work at our command to get all of the doctors registered.

The law states that it is the obligation of the doctor to register whether he received any notice from the State Board office or not. The law also states that if a doctor fails to register he "shall be fined". In every instance where a fine has been imposed, the doctor has thanked us because he realizes that paying the fine and registration fee is insignificant when compared to the very precarious situation of practicing medicine without a license.

The doctors who are beginning to practice in Virginia are automatically registered for the remainder of the fiscal year in which they are licensed. This is not generally understood. Another fact that is not understood and causes much confusion in the minds of the doctors is that if the registration fee is received after July 1 the doctor's name does not appear in the annual roster. This is another penalty which is suffered by the physician who does not properly carry out his annual registration.

A FINAL PLEA: Will you, the doctors practicing in Virginia, help us do a perfect job by carrying out your part of the obligation?

The Medical Society of Virginia . . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was held on January 21, at the Executive Motor Hotel.

Members Present: Dr. William Grossmann, Dr. James M. Moss, Dr. Dennis P. McCarty, Dr. Mack I. Shanholtz, Dr. Harry J. Warthen, Dr. Thomas S. Edwards, Dr. Raymond S. Brown, Dr. William S. Hotchkiss, Dr. William R. Hill, Dr. George J. Carroll, Dr. John A. Martin, Dr. James C. Respess, Dr. Carl E. Stark, and Dr. Carl P. Parker, Jr.

Others Present: Dr. Arthur A. Kirk, Third Vice-President; Dr. William J. Hagood, Jr., Vice-Speaker; Dr. W. Linwood Ball, Dr. Alexander McCausland and Dr. W. Callier Salley, AMA Delegates; Dr. Kenneth R. Crispell, Dean, University of Virginia School of Medicine; Dr. Kinloch Nelson, Dean, Medical College of Virginia; Dr. Hiram W. Davis, Commissioner, Department of Mental Hygiene and Hospitals; Mr. Chad P. Combs, Department of Field Service, American Medical Association; and Mr. William R. Miller, Attorney for the Society.

Public Relations

The Robert Kline Company, with the support of Blue Shield of Virginia, has devised a public information program of considerable interest to medicine. Mr. Kline told Council that the idea for the program came about as a result of public relations discussions with The Medical Society of Virginia in 1969.

The program will feature low cost film casettes which can be used in the physician's office, his waiting room or his home. This means that it can be used for both public information and continuing education.

Blue Shield of Virginia has indicated its willingness to participate in the program and proposes to underwrite the cost of the first two film cartridges. It is Mr. Kline's plan to use the many excellent scientific and public relations films already available through AMA, pharmaceutical films, etc. as sources upon which to draw. Initial cost to the physician would be $50.00 plus a rental of $25.00 per month.

Mr. Kline went on to say that he hoped The Medical Society of Virginia would establish a film screening committee in order to make sure that the films used are appropriate.

Dr. Nelson and Dr. Crispell agreed that the use of casettes represents a new and very promising method of teaching and that the program has definite possibilities.

While some concern was expressed that a program of this kind might reduce attendance at annual meetings, it seemed to be the consensus that interest in continuing education might well be stimulated to the point where attendance would actually increase.

Dr. Moss then offered a motion endorsing the program as presented with the understanding that The Medical Society of Virginia would have the privilege of screening the various films. *The motion was seconded and carried.*

Medicare

Mr. Curtis J. Kelly, Administrator of Travelers Medicare Office in Richmond, discussed with Council some of his more pressing problems. For example, the public has been lead to believe that every possible service is covered under Medicare—which, of course, is not true. Also, services provided by physicians must be reasonable and necessary and this means very close supervision where Travelers is concerned. Every effort is made to guard against over-utilization. This also means that physicians should make every effort to provide full and satisfactory explanations concerning services provided.

Mr. Kelly went on to say that his office processes between 60,000 and 90,000 statements monthly and, as a result, medical consultants are badly needed. He expressed the hope that the Society would recommend to his office some medical consultants in the Richmond, Roanoke and Norfolk areas.

Cooperation on the part of physicians was described as generally good and Mr. Kelly was especially complimentary concerning the efforts of one particular component society.

There followed considerable discussion during which a suggestion was made that local medical societies be requested to appoint committees to handle Medicare problem cases. It could well be that some societies would wish to use existing mediation or review committees.

Dr. Stark moved that component societies be urged to cooperate with the Medicare office by designating review committees for this purpose. The President of each society would be written a special letter of

explanation covering the need for such cooperation. The motion further provided that the Travelers Medicare Office would submit review requests to the State Office for referral to appropriate local committees for investigation and such recommendations as they believe advisable. The reports and recommendations would be routed back through The Medical Society of Virginia. *The motion was seconded and carried.*

Legislation

Mr. Miller reported on those matters considered by the Legislative Committee of the Society during its meeting on January 18. During a discussion concerning a proposed bill on abortions, mention was made of the fact that there was no exemption of liability for those physicians who refuse to perform an abortion because of moral or religious reasons. Mr. Miller expressed the opinion that there was little danger of liability.

The breath test was discussed at some length—especially the action of the House of Delegates last October which put the Society on record as endorsing the breath test only as a screening procedure. It was brought out that Virginia is apparently one of only four states not recognizing the breath test at this time. The reliability of the test has been proven to the satisfaction of most Courts.

The feeling was expressed that Council could not very well reverse an action of the House. It was pointed out, however, that such reversal might well be justified on the basis of information not available to the House last October.

It was moved that the resolution adopted by the House of Delegates be amended by striking that portion which reads "as a screening test to determine the need for a quantitative blood test for alcohol." *The motion was seconded and adopted.* (One negative vote recorded.)

Mr. Miller reported that a bill had been introduced (SB 19) which would have the statute of limitations for malpractice based upon date of discovery rather than date of commission. *A motion by Dr. Stark to oppose any such amendment to the statute of limitations was seconded and adopted.*

It was learned that a number of drug bills would undoubtedly be introduced during the current session of the General Assembly it was agreed that the one sponsored by the Virginia Pharmaceutical Association seemed to have much in its favor. *A motion by Dr. Moss that the VPA bill be supported if approved by Dr. Shanholtz and Dr. Hiram Davis was seconded and adopted.*

Also discussed at some length was the threatened loss of charitable immunity presently enjoyed by many hospitals. *A motion by Dr. Moss to support the Virginia Hospital Association in its efforts to retain charitable immunity for hospitals was seconded and carried.*

Other legislation discussed included that pertaining to Hearing Aid Fitters and Dealers, Medical Examiners fees, Uniform Anatomical Gift Act, State Pharmacy Code, Hill-Burton supplemental funds, Board of Medical Examiners, mental health, blood alcohol levels, etc.

Abortions

Special attention was given the report of the VALC study committee on abortions. There was considerable discussion as to whether the Society should actually support the legislation recommended by the committee or whether it should simply refer to its policy statement of 1967.

A motion by Dr. McCarty that The Medical Society of Virginia reaffirm its policy statement on abortions was seconded and adopted. (Two negative votes recorded.)

Virginia Medical Monthly

Dr. Warthen, Editor of the Virginia Medical Monthly, advised Council that advertising volume was not increasing and that it might well fall off a bit more during the year. He went on to say that, since the Monthly has been operating at a loss for some time, Council might wish to give some thought to a possible cut-back in scientific content. While this would reduce publication cost, it would also make the Monthly less attractive to the membership.

It was suggested that a study be conducted by Dr. Warthen and the Editorial Board and that their findings be included in the Board's annual report to the House.

A motion by Dr. McCarty which would leave the matter to the discretion of Dr. Warthen was seconded and adopted.

Medicare and Chiropractic

Called to Council's attention was the fact that Congressman Downing had recently introduced a bill which would permit chiropractors to participate in the Medicare program. Dr. Raymond Brown stated that he would look into the matter and seek to learn

just why the bill was introduced. Before discussing the matter with Dr. Downing personally, he will talk with First District physicians who have always been very close to him.

HEW Appropriations Bill

Dr. Grossmann stated that telegrams had been sent to Virginia's Congressional delegation expressing concern over possible outright rejection of the HEW appropriations bill. It was feared that the denial of badly needed funds to the Nation's medical schools and medical students would seriously handicap efforts to meet the physician shortage problem. Replies received thus far have indicated that Virginia's Congressional delegation, for the most part, share this concern.

Services of Hospital Staff Physicians

Dr. Grossmann presented a report of a special committee which had been appointed to study in detail the matter of payment for services provided by hospital staff physicians. The report pointed out that teaching and training programs for house officers and medical students in university medical centers and community hospitals with educational programs have used the "team approach" for many years. Under this system, an identifiable and licensed teaching physician assumes responsibility and directs the team in the care of such patients who either choose or are assigned to the group.

It was the committee's recommendation that the Society recognize and approve this system of medical care, and also approve the principle that the teaching physician in charge of a team could submit a fee for professional services provided by that team. The report did, however, make this recommendation with certain basic provisions.

Dr. Moss then introduced a motion calling for adoption of the report. The motion was seconded.

Dr. Respess pointed out that the main issue under discussion was that of reimbursement of responsible teaching physicians and not members of house staffs. It was also pointed out that an "attending physician" means different things to different people and any such reference should be deleted.

Following considerable discussion it was moved by Dr. Stark that the report of the special committee be tabled. *The motion was seconded and adopted.*

Publication Committee

Dr. Hagood requested that further consideration be given to the advertising problem of the Virginia Medical Monthly. He stated that the Monthly was an excellent publication and that the Society had an obligation to the membership to keep the publication at the highest possible level. Consequently, it was Dr. Hagood's feeling that the report on the matter should be completed some time before the next annual meeting. It was also suggested that the study be conducted by the Editorial Board.

It was then agreed that Dr. Warthen would include his findings and recommendations in the annual report of the Editorial Board. This will insure consideration by a Reference Committee of the House.

Public Funds for Nursing Degree Programs

Considered next was a resolution by the Norfolk County Medical Society which called attention to the fact that the American Nurses' Association had recently recommended that public funds should only be made available to associate, baccalaureate and masters programs that are nationally accredited by the accrediting agency recognized by the nursing profession. The resolution pointed out that over 60% of our practicing nurses are products of diploma schools and that the ANA proposal would tend to stifle and suppress this very important segment of nursing education. The resolution strongly opposed such recommendations and called for vigorous support for the continuation and betterment of diploma schools of nursing.

Dr. Martin moved that the Norfolk County resolution be received and that The Medical Society of Virginia reaffirm its support of diploma schools of nursing and, further, that members of Virginia's Congressional delegation be so advised. *The motion was seconded and adopted.*

Incorporation of Solo Practitioners

Dr. Robert Hudgens, President of the Virginia Association of Professions, discussed legislation designed to make possible the incorporation of solo practitioners. He indicated that the Virginia Association of Professions was very interested in the legislation and was taking the lead in having a bill drafted and introduced. He went on to say that the solo practitioner had been neglected too long and should not be penalized simply because he is not a member of a group.

Some concern was expressed over the term "incorporate" and Dr. Hudgens stated that there need be no fear that such legislation would make it possible for persons other than physicians to engage in the corporate practice of medicine. Under the proposed

legislation, all shareholders must be licensed members of the profession concerned and this would prevent hospitals, insurance plans, etc. from engaging in the corporate practice of medicine. It was suggested, however, that Mr. Miller study the final bill from the standpoint of any threat which might be posed from nonphysician groups.

It was then moved by Dr. Hill that the proposed legislation be supported with the understanding that it would receive final clearance from the Society's attorneys. *The motion was seconded and adopted.*

Annual Meetings

During its meeting of December 10, Council had directed that meeting dates be obtained for the 1976 annual meeting in Williamsburg, and the 1977 annual meeting in Richmond.

It was reported that the dates of October 12-16 were available at Richmond's Hotel John Marshall in 1977 and a motion of approval was seconded and carried.

Dates for the 1976 meeting in Williamsburg were, however, somewhat indefinite because of the various events surrounding the observance commemorating the founding of our Nation. It was determined, however, to meet in Williamsburg in 1976 should dates be made available. (Since the meeting of Council, Colonial Williamsburg has reserved the dates of November 4-7 for the 1976 meeting.)

Surgical Assistants

The Society had been requested to give consideration to the matter of coverage under Blue Shield contracts for services provided by surgical assistants. This lack of coverage has caused some misunderstanding over the State and the thought has been expressed that the policy of nonpayment is quite unfair to the patient.

The Society's Committee of Blue Shield Directors brought the matter to the attention of the Blue Shield Board during its last meeting and reported that as of January 1, 1970, surgical assistants will be paid under the Federal Employee Program.

It was also learned that Blue Shield of Virginia will, from this point on, study the experience of such coverage under the Federal Program and then give serious consideration as to whether such coverage should be included under regular Blue Shield contracts.

Meeting with Congressional Delegation

Dr. Grossmann reported that the special committee, headed by Dr. Murrell, had decided to abandon its plans for a special meeting in Washington with members of Virginia's Congressional delegation. The meeting was cancelled primarily because of the inability to obtain an acceptable meeting date earlier in the year. Several of the matters which had been proposed for discussion have already been considered by the Congress. Consequently, it seems advisable to wait now until the annual Congressional luncheon is held in the spring.

Congressional Luncheon

Council agreed that the spring luncheon for Virginia's Congressional delegation should be held once again—preferably in late April or early May. It is necessary that arrangements be made as soon as possible if the Speaker's Dining Room of the Capitol is to be obtained.

It was moved by Dr. Hotchkiss that the luncheon be held and that arrangements be handled through Dr. Murrell and Congressman Satterfield. *The motion was seconded and adopted.*

Chiropractic

The Society has been advised by the American Medical Association that an effort is being made to cover chiropractic services under Medicare. Mr. Combs reported that such legislation is under consideration by the House Ways and Means Committee and called attention to the fact that Congressman Joel Broyhill is a member of that body. He pointed out that chiropractic has been under attack from a number of sources in recent months, including the Department of Health, Education and Welfare. Also, some of our senior citizen groups have pointed out the dangers inherent in chiropractic.

The Executive Secretary was requested to send all available material on the subject to Congressmen Broyhill and Downing. The thought was expressed that individual Councilors should also contact their Congressmen.

Laboratories

The Norfolk County Medical Society recently adopted a resolution calling for action . . . which will result in legislation enabling the Virginia State Department of Health to license, supervise and regulate for the public welfare blood banks, blood collecting situations, plasmapheresis centers and similar activities, laboratories and organizations not functioning as an integral part of a duly accredited hos-

pital and not concerned solely with the withdrawing of blood samples for tests requested by the patient's physician."

It was reported that a study recently conducted by the State Department of Health found that laboratories in the State are generally doing a good job. The report recommended that any regulatory legislation be postponed until additional information could be gathered from Medicare and Medicaid. It was the recommendation of the Legislative Committee, however, that legislation advocated by the Virginia Society of Pathology be supported if it has the approval of Dr. Shanholtz.

During a discussion of plasmapheresis centers it was agreed that reinjections must be considered the practice of medicine and thus fall within the jurisdiction of the Board of Medical Examiners. Dr. Carroll reported that the Board has been looking into this particular situation and that he personally will remain in contact with the Norfolk County Medical Society.

Standard Health Examination Form

The Committee on Child Health has requested that a "Standard Health Examination Record", as devised by the American Academy of Pediatrics, be approved by the Society. It is the Committee's hope that use of the form will become statewide.

A motion to approve the "Standard Health Examination Record" was seconded and adopted.

Funds for Third Medical School

Attention was called to the fact that the Norfolk area has requested State funds ($100,000.00) to assist in its plannning for a third medical school. A question was raised as to whether The Medical Society of Virginia should take a stand on medical school budgets, even though it had previously endorsed plans for a third medical school in the State.

The question, as presented to Council, was whether the two existing schools should be more adequately supported or a portion of the funds available directed to a third school. The feeling was expressed that since a third school is needed we have no alternative but to support its request for funds. It was pointed out that $100,000.00 is perhaps the least amount which could have been requested.

It was then moved by Dr. Hotchkiss that Council, being aware of the need for a third medical school in Virginia, support the application of the Norfolk Medical Center Authority for State funds to be used in its planning effort. *The motion was seconded and carried.*

Medicaid Billing

Dr. Grossmann stated that a full report on the Medicaid billing situation would be available to Council at its next meeting. The recommendations of the special Committee on Medicaid Billing are in the hands of the Governor's Advisory Committee at this time for consideration.

Revision of Nurse Practice Act

The Society has been requested by the Virginia Nurse's Association to support a bill updating the Virginia Nurse Practice Act. It was was pointed out that the current Act has remained virtually unchanged since its enactment in 1903. The proposed revision, for the most part, has to do with the licensing of the various nursing categories. It will require anyone who practices or identifies herself as a nurse to be licensed.

It was pointed out that the proposed bill, with perhaps minor exceptions, seems generally acceptable and adequately protects the physician and his medical assistants. Section (d) of Article 1 states: "Nothing in this chapter shall be construed in any way to prohibit or limit the performance by any person of acts in the care of a patient when such acts do not require the knowledge and skill required of a registered professional nurse or licensed practical nurse, or when such acts are performed under direction of a licensed physician, licensed dentist, or registered professional nurse."

It was then moved that the proposed revision of the Nurse Practice Act be supported. *The motion was seconded and carried.*

Patrick County Application

Physicians residing in Patrick County have requested that they be permitted to organize their own component society. At the present time, Patrick County is a part of the Patrick-Henry Counties Medical Society. These physicians have pointed to the long distances involved if they are to attend meetings in Martinsville.

Because of the time factor, a formal application had not yet been received. The Secretary reported, however, that he had talked with the physicians by phone and that clearance had been obtained from the Patrick-Henry Society. The approval of Dr. F. H. McGovern, Councilor from the Fifth District, had also been obtained.

It was moved that, upon receipt of a formal petition, a charter be issued for the new Patrick County Medical Society.

The motion was seconded and adopted.

Woman's Auxiliary

Council was advised that the Auxiliary is very much in need of a second film having to do with drug abuse. The film, produced under the auspices of the Navy Department, is considered one of the best available and fits in nicely with the Auxiliary's drug abuse program. The Auxiliary has requested that the Society assist in the purchase of the film to the extent of $100.00. The total cost is substantially more.

Dr. Stark moved that the Society contribute $100.00 towards the purchase of the film. *The motion was seconded and carried.*

Nurse Practitioners

Dr. Grossmann reported that the University of Virginia School of Medicine will soon embark on a Nurse Practitioner program within the Department of Pediatrics. It is an experimental program designed to determine whether it is possible, in a short period of time, to train nurses to do much of the work presently being done by pediatricians. Should the program prove practical, it will permit physicians to more effectively provide the care required by an increasingly large number of children.

Dr. William G. Thurman, Chairman of the Department of Pediatrics at the University, has indicated that the program will run for sixteen weeks and that the nurses involved are either graduates of accredited programs or holders of Masters Degrees. The training will be both didactic and clinical and the nurses will, at all times, be under the direct supervision of a physician.

While there are still many questions to be answered in connection with the program, Dr. Thurman has indicated his willingness to discuss it with Council at any time.

Himler Report

It has been the understanding of the Society's AMA Delegates that copies of the Himler Report would be made available to all state and component medical societies. To make sure that this is done, the Secretary was requested to obtain and distribute copies to every component society in the state and request such thoughts and recommendations as they might wish to offer.

Next Council Meeting

It was agreed that Council should meet again before the annual meeting of the American Medical Association in Chicago. The AMA meeting will be from June 21-25.

There being no further business, the meeting was adjourned.

ROBERT I. HOWARD, *Secretary*

APPROVED:

WILLIAM GROSSMANN, M.D., *President*

Woman's Auxiliary....

Mrs. Frank Gastineau, 1959-60 President of the Woman's Auxiliary to the American Medical Association, passed away February 13 after a lingering illness. Mrs. Gastineau, Virginia members will recall, was the guest speaker at the mid-year board meeting in 1968. She is well remembered for her organization of and vigorous leadership in the American Medical Association Education and Research Foundation. Until more recently she served as secretary-treasurer of AMPAC and was the only woman on the ten member AMPAC board.

Our sincere sympathy is extended to her family. We feel a deep sense of loss in the passing of a strong and dedicated leader.

General Assembly, February 18

. . . greeted members with spring-like temperatures as the auxiliary gathered in the Rotunda of the historical State capitol in Richmond. Guided tours prior to the assembly instilled in us pride in our Virginia heritage and keen interest in the history being made here and now. A booklet with the day's agenda enabled us to follow the bills in debate. Many followed closely the activities of the legislators from their respective districts. The bill creating legislation for the science museum, which the auxiliary has supported and followed with a great deal of interest was introduced February 20 and subsequently passed on the senate floor with only two dissenting votes. Nineteen auxiliary members and two from WA/SAMA felt it a very worthwhile experience and education to see the general assembly in action. The Honorable Senator Leroy Bendheim introduced the group in the senate chamber.

WA/SAMA Makes the Years

. . . of being an "in between" wife more meaningful wrote Robin Kappler, national president-elect. When you meet these young women there is no impression of their being "in between" anything which is proof of their program's success. The Woman's Auxiliary to the Student American Medical Association provides an invitation to the medical world which formerly did not include them. They are very much *in it* and *with it* and WA/AMA can anticipate their joining the ranks with much pleasure. WA/SAMA helps the student wives develop personal ties and organizational skills for later years when they will be wives of practicing physicians. A five dollar donation provides you with a sustaining membership and their national publication.

The Arlington auxiliary is sponsoring a "Family Night" in conjunction with the medical society. The children are guests of their proud mamas and papas for the evening. Salom Rizk, author of the best seller "Serian Yankee" will speak on "America Is More Than a Country". Mr. Rizk came to this country a number of years ago as an immigrant. He was sustained through early trials with a keen sense of humor and viewed his new country through eyes the natives could not. Mr. Rizk is presently writing for Reader's Digest and lecturing around the country. The *New York Times* writes of the book, "A rare and extraordinary chronicle with humor that bubbles like a mountain spring set forth with the simplicity which is always telling, often picturesque . . . beautiful."

The Alexandria auxiliary has maintained a successful shoe center for indigent families of the county for several years. This year the program has been expanded to include outer clothing as well. They have joined forces with Hopkins House, the local settlement house, and will employ young people in need of employment to keep the venture open longer hours and more days of the week. The items are reconditioned and



Painful night leg cramps...

unwelcome bedfellow for any patient– including those with arthritis, diabetes or PVD

One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

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(quinine sulfate 260 mg., aminophylline 195 mg.)

Specific therapy for night leg cramps

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Treating atrophic vaginitis complicated by infection... **is as easy as AVC/Dienestrol**

Dienestrol helps restore estrogen-deficient vaginal mucosa.
It is the *particular* ingredient in AVC/Dienestrol that improves cell maturation counts[1,2] — helps stimulate the restoration of normal vaginal epithelium to resist infection.

Two recent studies reconfirm AVC/Dienestrol efficacy.[1,2] AVC/Dienestrol is proven effective against monilial, trichomonal, nonspecific bacterial vaginitis, and mixed infections.[1,2] AVC/Dienestrol combats infection, helps restore tissue resistance to reinfection.

So even in complex cases, the treatment can remain the same. Comprehensive. Effective. Easy as AVC/D.

Contraindications: Known sensitivity to sulfonamides; diagnosis or familial history of carcinoma of the genital tract or breasts; precarcinomatous lesions of the vagina or vulva; palpable uterine fibromyoma; mammary fibroadenoma; depressed liver function.

Precautions/Adverse Reactions: The usual precautions for topical and systemic sulfonamides should be observed because of the possibility of absorption. Burning, increased local discomfort, skin rash, urticaria or other manifestations of sulfonamide toxicity or sensitivity are reasons to discontinue treatment. The use of AVC/Dienestrol does not preclude the necessity for careful diagnostic measures to eliminate the possibility of neoplasia of the vulva or vagina. Manifestations of excessive estrogenic stimulation through dienestrol absorption may occur. These include uterine bleeding, breast tenderness, exacerbation of menstrual irregularity and provocation of serious bleeding in women sterilized because of endometriosis. Endometrial withdrawal bleeding may occur if use is suddenly discontinued.

Dosage: One applicatorful or one suppository intravaginally once or twice daily.

Supplied: 'AVC/Dienestrol Cream'—Four ounce tube *with* applicator. 'AVC' and 'AVC/Dienestrol Suppositories'—Box of 12 *with* applicator.

References: (1) Salerno, L. J.; Ortiz, G., and Turkel, V.: Vaginitis: A Diagnostic and Therapeutic Approach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinois, June 1966. (2) Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

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Cream (dienestrol .01%, sulfanilamide 15.0%, aminacrine hydrochloride 0.2%, allantain 2.0%)
Suppositories (dienestrol 0.70 mg., sulfanilamide 1.05 Gm., aminacrine hydrochloride 0.014 Gm., allantain 0.14 Gm.)

TRADEMARK. A V C AV-920A 7/69

repaired by the home economics and trade departments in the high schools. A wonderful example of what working together can accomplish.

The Eighth Annual Antique show for the Richmond auxiliary March 10-13 promises to bring the necessary funds for their contributions to the Program Maintenance Guidance Clinic for Emotionally Disturbed Children, the Virginia Home and the Medical Scholarship for Diploma Nurses in Richmond. A successful reception and dinner was held for patrons at the John Marshall Hotel. Exhibitors from the eastern seaboard displayed their treasures. An additional point of interest in the show was the *Doctor's Hobbies* section where physicians exhibited their interests and capabilities outside of the field of medicine, such as building carpentry, photography, painting, clock assembly and so on. One physician displayed his collection of Korean Art.

Suggested Programs for Mental Health

Organize a committee of interested auxiliary members to plan and develop a program. Obtain auxiliary support, the approval of auxiliary membership and the medical society advisory council.

Enlist cooperation of your local mental health association in conjunction with the state department of mental hygiene and hospitals, as needed. They are most helpful in supplying program topics, projects, literature, speakers and films. Most films can be obtained through local sources (Mental Health Associations, information officers of state departments).

Promote participation in mental health programs and projects with other groups such as women's clubs, service organizations, professional organizations, professional associations, civic groups, and parent teacher associations.

Tell them of your interest and willingness to assist in planning programs, providing literature, and helping to obtain films and speakers.

Choose your area of involvement to help meet a definite need in your area, geographically.

a. Is your auxiliary represented on *boards of community agencies* such as The Family Service Agency, the Mental Health Association, The Community Health Services Board, the Federation of Parent Teacher Associations, Boards of Hospitals and Clinics and other planning and service councils? Committee assignments?

b. *Volunteer services* in hospitals, clinics, rehabilitation centers, half-way houses, sheltered workshops, mental hospitals or psychiatric wards of general hospitals.

c. Volunteer services in community agencies as office and clerical help, information officers or professional help.

d. *Financial contributions* to various mental health projects and educational programs.

e. *Specific programs* sustained, reevaluated or initiated

—Suicide Prevention Centers
—Personal Education Seminars (and tours)
—Parent Education Workshops
—Radio Broadcasts, Television Spot Announcements
—Recruitment into mental health work (youth projects scholarships)
—Teacher Conferences

Utilize recommended national auxiliary *package programs*

—alcohol—mental health of children—drugs—This would be an ideal program to arrange with your PTA and Mental Health Association.

Editorial ....

Malpractice Suits—Where Will They End?

AN ARTICLE captioned "A Crisis Is Developing Over Malpractice Suits" appeared in the February 2 issue of the National Observer. This study, in depth, was prepared by John Peterson from material obtained in California. The malpractice problem in that State has reached fantastic proportions and, unfortunately, whatever develops in California, be it tularemia, Earl Warren, or coccidiomycosis, has a way of spreading to other parts of the country. This means that unless a solution can be reached on the west coast and the epidemic scotched at its origin, we may expect our current malpractice problems in Virginia to continue to intensify—a depressing prospect.

In recent months there have been awards of $1,200,000 and $1,400,000 in California. The sunshine states appear especially susceptible, for Florida has had two awards of $1,000,000. Nearly 10,000 malpractice claims are anticipated throughout the country during the present year. The excessive awards in California have boosted to astronomical figures the premiums surgeons must pay for malpractice protection. Surgeons operating in the Los Angeles area now pay about $4,000 annually and, according to Peterson, doctors who have lost one or more malpractice suits are paying as much as $20,000 annually. The situation has become so acute in Southern California that the companies writing malpractice insurance will have to decide within the next few months whether they will continue these policies, according to John C. Allen, president of the brokerage company handling malpractice coverage.

The extension of the doctrine of *res ipsa loquitur* ("it speaks for itself") in California is doubtless extending to other parts of the country. Ostensibly this was done to offset the tendency of doctors not to testify against fellow physicians but it also has brought other abuses in its wake. Abolishing the statute of limitations in malpractice cases, which likewise originated in California, has now extended eastward—even to our adjoining State of Maryland.

Virginia was relatively free from malpractice suits until a few years ago. Now, according to one incomplete tabulation, about 125 suits are pending in the State. About 30 of these are major suits and the remainder are smaller claims, the majority of which will not go to trial. Many will be settled out of court for it is estimated that defending a major case costs the insurance company in the neighborhood of $15,000—even if the case is won. There is another school of thought regarding settlement

out of court. Easy settlements may invite more nuisance cases and ultimately cost more than fighting each one on its own merits.

Tidewater Virginia has the worst record. There have been three $100,000 awards or settlements in this area during the past three years. A suit for $2,000,000 is now pending in Tidewater. These cases have resulted largely from the many transients in and about Norfolk who feel no allegiance to any physicians, and from the activities of a legal firm in that city which has been exceedingly zealous in this field of endeavor. It is ironical that a member of this firm repeatedly berated the current cost of insurance premiums as being unduly high during the gubernatorial campaign last year. Consistency, thou art a jewel.

Northern Virginia has been a close second to Norfolk but the settlements there have been somewhat smaller. Richmond has had its share of suits but thus far it has been a rather modest third in the State. Roanoke and Southwest Virginia generally have been relatively free of these cases —thanks, no doubt, to a stable population and perhaps to a more discreet type of practicing physician.

With this background it is easy to understand why our premiums have risen so sharply during the past few years. Surgeons in the Richmond area paid about $25 annually for this protection until fairly recent times. The premium for surgeons two years ago was $285 and last year it rose above $400. We will be fortunate if it is not higher this year.

Many solutions have been proposed on the west coast in an effort to curb the spiral of suits and awards but none has been effective. Some physicians attempt to protect themselves by making admittedly unnecessary tests and taking costly x-rays with the inevitable additional cost to the patient. A counsel of the California Medical Association has suggested the possibility of each patient taking out a malpractice policy upon entering the hospital "much like flight insurance". Another approach has been the suggested use of an arbitration panel composed of a doctor, a lawyer and a professional arbitrator. A decision by this panel would establish the award if it should appear justified. A beneficial aspect of this method would be to minimize the publicity associated with such cases, for malpractice suits multiply when large verdicts appear in the newspapers. It should be remarked that the news media in Virginia have been generally very helpful in not publicizing such awards.

Peterson made no reference to a method that was adopted eight years ago by our Society. The Medical Society of Virginia, in conjunction with the Virginia State Bar, developed the Joint Medico-Legal Panel for screening malpractice cases. Despite a detailed article in the June 1969 issue of the Virginia Medical Monthly by its chairman, Dr. Carrington Williams, Jr., many physicians in Virginia are either unaware or have

failed to avail themselves of the provisions of this committee. Dr. Williams stated that 27 cases had come before the panel. Nine were decided in favor of the patient plaintiff and fifteen were in favor of the doctor defendant, while three were settled prior to the hearing. Any physician who is threatened by suit should contact the Screening Panel immediately. If there is no merit in the case, the physician will avoid trouble and embarrassment and the insurance company will be spared much expense.

An ounce of prevention is always worth a pound of cure and it is surprising that no mention was made in the California article regarding the greatest preventive of all—the early establishment of a cordial patient-physician relationship with continuation of this happy state throughout the period of treatment. The most vulnerable physicians are the ultra-scientific who do not devote sufficient time to the patient and his relatives and, at the other end of the professional spectrum, those who undertake procedures beyond their training and ability. The well trained physician who endeavors to explain each aspect of the patient's condition and treatment and who demonstrates his sincere interest in the welfare of the patient will have little reason to fear a malpractice suit.

H. J. W.

Medical-Military Portraits of Union and Confederate Generals

DR. PAUL E. STEINER, a professor of pathology at the University of Pennsylvania School of Medicine, has obviously achieved a labor of love in this detailed review of the lives of ten general officers of the American Civil War. Five Federal and five Confederate officers are reviewed. Lee and Grant, Beauregard, Sheridan, McDowell, Longstreet, Halleck and a host of other dominant figures were by-passed in lieu of Reynolds, McPherson, McClellan, Sherman, Johnston, Hooker, Hood, Jackson, Ewell, and Forrest. Reasons for selections of these men over others is not clearly indicated. Perhaps this tells us something of the author.

The study of senior generals in command is always an interesting exercise, and especially so for the Civil War. These men influenced the course of American history, and hence their ailments during their command periods undoubtedly played a part in their overall decisions. One must recall, however, the time in history of this drama, as it unfolded, and remember it was prior to the discoveries and methods of Lister, Pasteur, Banting, Koch, Fleming, Halsted, Herrick and others. Dr. Steiner's medical histories are so meager as to make them of only speculative interest

in most cases. This is no fault of the author as records were inadequately kept in most instances, despite the presence of Drs. Tripler, Letterman, Moore, McGuire and many other competent surgeons and their retinues.

What this book lacks in medical history is adequately compensated by exhaustive research into the lives of the men discussed. Diseases were of a rather constant pattern and took a far heavier toll than wounds in the armies. Healthy regiments were the exception. So-called "camp diseases", including typhoid fever, diarrhea, dysentery, and malaria ran rampant, with diarrhea and the dysenteries being commonest. Scurvy, meningitis, "inflammatory rheumatism", typhus and the communicable and infectious diseases were all present. Neuropsychiatric illnesses, especially stress effects, apparently played a major part in the officers' illnesses, including especially Sherman, Jackson, Ewell, and McClellan. One case of possible alcoholism (General Hooker) is described. Infectious hepatitis was present, but not recognized as such, with 414 deaths in the Union armies alone.

Among the interesting sidelights brought out was that the West Point graduating class of 1846 included the following general officers: Reno, Couch, Stoneman, Foster, Sturgis, Seymour, Palmer, Gordon, and Gilbert for the Union, and, for the Confederacy, Jackson, Pickett, Maury, Wilcox, Gardner, Maxey, Adams, Smith, and Jones.

The class of 1853 at West Point included Schofield, Hood, and McPherson, the latter two being roommates, and McPherson reputedly coached Hood through the mathematics courses. McPherson later died at Atlanta under the guns commanded by Hood. The superintendent of West Point in 1853 was Captain and Brevet Colonel Robert E. Lee (class of 1829), and the speaker at the graduation ceremonies was the Secretary of War, Jefferson Davis (class of 1828).

The author's bias comes through in his too sympathetic handling of Sherman, to the detriment of many others, but he squares things up commenting favorably on Forrest.

The mind boggles over "might have beens", especially medical and surgical diseases we now consider curable or correctable, but such is a study in futility.

This book, plus Steiner's other treatise on the same subject "Disease in the Civil War", Springfield, Illinois: Charles C. Thomas, 1968, make welcome reading in this most-written-about-war in history. It carries an air of authenticity, reflecting massive research and careful documentation. It is recommended to medical and lay readers.

ROBERT EDGAR MITCHELL, JR., M.D.

Steiner, Paul E.: Medical-Military Portraits of Union and Confederate Generals. Philadelphia. Whitmore Publishing Co. 1968. $6.00.

News . . . .

Calendar of Events

Annual Postgraduate Course—Sponsored by Staff of Gill Memorial Eye, Ear, Nose and Throat Hospital and Clinic—Hotel Roanoke—Roanoke—April 12-15, 1970.

Virginia Society of Anesthesiologists—Annual Spring Symposium—Executive Motor Hotel—Richmond—April 17-19, 1970.

Spring Series of Thursday Afternoon Lectures—University of Virginia School of Medicine—Charlottesville—through April 23, 1970.

Annual Medical Symposium—Sponsored by Bristol Memorial Hospital—Some Aspects of Infectious Disease and Antibiotic Therapy—Holiday Inn—Bristol—April 23, 1970.

Norfolk General Hospital—Continuing Education Symposium—Recent Advances in Cancer, Infectious Diseases and Endocrinology—Norfolk—April 30—May 1, 1970.

Virginia Society of Ophthalmology and Otolaryngology—Annual Meeting—Williamsburg Lodge—Williamsburg—May 6-9, 1970.

Virginia Academy of General Practice—Annual Scientific Assembly—Hotel Roanoke—Roanoke—May 6-10, 1970.

Cardiac Symposium—Sponsored by Montgomery County Heart Association—Bethesda Country Club—Bethesda, Maryland—May 20, 1970.

International Cancer Conference—Sponsored by International Union Against Cancer—Houston, Texas—May 22-29, 1970.

Child Psychiatry Spring Forum—Medical College of Virginia—Richmond—May 29, 1970.

Annual Alumni Scientific Assembly—The Medical College of Virginia—Richmond—June 5, 1970.

Seaboard Medical Association—Nags Head, North Carolina—June 18-21, 1970.

American Medical Association—Annual Convention—Chicago—June 21-25, 1970.

Annual Meeting—Blue Shield of Virginia—Cascades Conference Center—Williamsburg—July 10, 1970.

Medical Aspects of Sports Conference—Sponsored by The Medical Society of Virginia and Virginia High School League—University Hall, Charlottesville—Saturday evening, July 25, and Sunday, July 26, 1970.

Flying Physicians Association—Annual Meeting—Bay Shore Inn—Vancouver, British Columbia—Augusta 23-28, 1970.

The Medical Society of Virginia—Annual Meeting—Hotel John Marshall—Richmond—October 11-14, 1970.

* * * * * *

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following doctors were admitted into membership in The Medical Society of Virginia during the month of February:

Ramon Lino Amor, M.D., Newport News
Carolyn Dale Candler, M.D., Front Royal
Solon Edward Davis, III, M.D., Richmond
William George Eddins, M.D., Roanoke
John Milton Hess, M.D., Norfolk
Thomas Kerr Laird, M.D., Danville
Jose Agustin Montes, M.D., Hampton
Thomas Ellsworth Morris, M.D., Newport News
Thomas William Payne, M.D., Newport News
Robert B. Phillips, Bowling Green
Forrest Williford Pitts, M.D., Charlottesville
Russell Edward Reid, M.D., Newport News
William E. Roll, Jr., M.D., Fairfax
Robert Lawrence Smith, M.D., Virginia Beach

Dr. Kinloch Nelson,

Richmond, dean of the School of Medicine at the Medical College of Virginia, has been elected a Master of the American College of Physicians. The honor will be conferred upon him at the annual session of the College in Philadelphia, April 13th.

Dr. Daniel N. Mohler,

Professor of Internal Medicine at the University of Virginia, has been appointed associate dean of the School of Medicine.

Medical Aspects of Sports.

The 1970 Conference on Medical Aspects of Sports will be held in Charlottesville on July 25th and 26th. The Conference, sponsored jointly by The Medical Society of Virginia and Virginia High School League, will feature some of the country's outstanding authorities on sports and sports medicine.

This year the Conference, for the first time, will hold a special Saturday night session featuring a well-known sports personality. A cocktail party and selected sports films will round out the evening.

The Sunday session will feature individual talks, panel discussions, and taping demonstrations.

Early Synovitis in Rheumatoid Arthritis.

The Division of Rheumatology and the Department of Orthopedic Surgery at the University of Virginia School of Medicine are cooperating in a national study to evaluate the role of early synovectomy in rheumatoid arthritis. Patients with proliferative synovitis of the knees or hands are candidates for this study. Physicians with possible referrals or who wish more information on this study are asked to call or write either: Dr. Carolyn M. Brunner, Department of Internal Medicine, (703) 924-5212; or Dr. Robert McLaughlin, Department of Orthopedic Surgery (703) 924-2244.

Virginia Thoracic Society.

The scientific program of this society will be held at the John Marshall Hotel, Richmond, April 30, 1970, starting at 11:00 A.M.

Programs are available upon request from the Virginia Thoracic Society, P. O. Box 7065, Richmond, Virginia 23221.

Virginia Association of Medical Assistants.

The first meeting of the new officers and the Board of the Association was held in Richmond, February 15th, with the president, Mrs. Jean Pair, Jarratt, presiding. There were twenty-four members present.

The annual meeting has usually been in the fall, but due to conflicting dates with other meetings, the Board decided to change their annual meetings. The next meeting

will be May 1-3, at Sunset Manor Hotel, Chesapeake. The annual seminar will be held at Williamsburg in November, the exact dates to be announced later.

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Wanted.

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Wanted.

Emergency Room Physician, Virginia license necessary. Minimum annual guarantee. Contact James A. Miller, M.D., Winchester Memorial Hospital, South Stewart Street, Winchester, Virginia 22601. Phone (703) 662-4121. (*Adv.*)

Wanted.

Doctor to share medical offices in excellent location, 1 or 2 afternoons a week in Fairfax City, Mosby Building. Suitable for Ob, Gyn, ENT, psychiatrist or dermatologist. Call (703) 273-3613. (*Adv.*)

Wanted.

Full time staff physician for Student Health Service at Virginia Polytechnic Institute, Blacksburg. For further information, write or call Emory R. Irvin, M.D., Blacksburg, Virginia 24060. Phone 552-6444. (*Adv.*)

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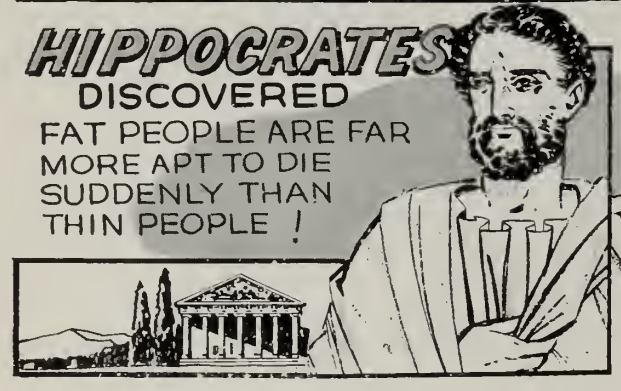
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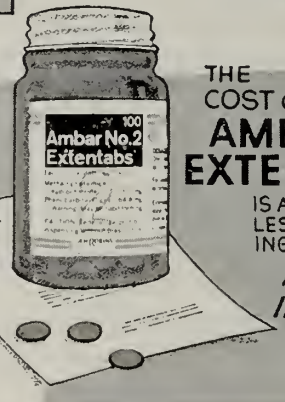


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Obituary....

Dr. William Lawrence Weaver,

Richmond, died February 17, at the age of sixty-six. He was a graduate of the Medical College of Virginia in 1932. Dr. Weaver had recently retired as medical supervisor for DuPont and professor of medicine at the Medical College of Virginia. Since his retirement he had formed the general medical clinic at Bethlehem Center in Fulton. Dr. Weaver had been a member of The Medical Society of Virginia for thirty-four years.

His wife and two daughters survive him.

Dr. Carl Scott Lingamfelter,

Richmond, died February 17. He was fifty-four years of age and a graduate of the Medical College of Virginia in 1938. Dr. Lingamfelter had practiced dermatology in Richmond since 1953. He served as associate physician in dermatology at the Medical College of Virginia. Dr. Lingamfelter had been a member of The Medical Society of Virginia since 1941.

His wife, two daughters and a son survive him.

Dr. McGuire.

Dr. Hunter Holmes McGuire, son of Dr. William Edward McGuire and Mary Stuart McGuire, was born in Richmond, October 22, 1895. He was a grandson of Dr. Hunter Holmes McGuire, founder of St. Luke's Hospital and the University College of Medicine, which merged with the Medical College of Virginia in 1913. He died November 6, 1969, at the age of 74, after a long and trying illness which he bore with great fortitude as he did many other serious illnesses, which plagued his useful and distinguished professional life.

He attended McGuire's School for the year 1911 and graduated from Episcopal High School in 1914 He attended the University of Virginia from 1914 through 1917, where he became a member of the Raven Society. He studied medicine at the Medical College of Virginia from 1917 to 1919 and then transferred to the University of Virginia Medical School where he earned the degree of Doctor of Medicine in 1921. There, he was also honored for his scholastic achievements by induction into Alpha Omega Alpha honorary medical fraternity. He was one of the first outsiders to be admitted to the Johns Hopkins Hospital in Baltimore as an interne. Dr. Thayer, Chief of Medicine, invited him to return for another year in the Department of Medicine, but because of his father's death, it became necessary for him to return to Richmond. He joined Dr. Stuart McGuire at St. Luke's Hospital for the practice of medicine. He became one of the founders of the McGuire Clinic in 1924 and was Chief of the Department of Medicine for about ten years. He retired from the McGuire Clinic in June of 1965 because of poor health, but continued to see many of his devoted patients in his private office until August, 1968, when he closed this office. Even after that he continued to see some of his life long patients until his final illness.

He was a member of the Richmond Academy of Medicine, where he will always be remembered for his valuable contributions to the History of Medicine Section, and particularly for his major efforts in the Confederate Medical Exhibit in 1961 to 1965. He was a member of The Medical Society of Virginia and the American Medical Association.

He was a devoted churchman and life long member of St. Paul's Episcopal Church, where he served on the Vestry.

Dr. McGuire was a skilled physician, a meticulous diagnostician and a patient therapist. He so captivated his patients with his sympathy and understanding that any physician who saw his patients in his absence was sorely tried to match his care, if indeed he ever could. He went above and beyond his call as their physician and became their father or brother, or even son, in his administration to their needs. He would get up at any hour of the night, often at great physical sacrifice of his own health, to care for the comfort of his patients as well as their medical needs.

NOW THEREFORE, BE IT RESOLVED that the Richmond Academy of Medicine hereby expresses it appreciation of his exemplary life and its sense of loss in his departure from our midst, and be it further resolved that a copy of these resolutions be made a permanent record of the Academy and that copies

be sent to the Virginia Medical Monthly and to the members of his immediate family.

Webster P. Barnes
William H. Harris, Jr.
John P. Lynch

Dr. Gorman.

Whereas: Almighty God has removed from our midst our distinguished friend and colleague, James Raymond Gorman, who died on February 3, 1970; we request that the following resolutions be adopted by the Lynchburg Academy of Medicine and that a copy be recorded in its minutes and that copies be sent to his widow and family and to the Virginia Medical Monthly.

We, his colleagues, the hospitals and citizens of Lynchburg and the surrounding areas, have suffered a great and irreparable loss.

Let it be further known: That his whole professional career was characterized by great professional ability, his boldness as an operator, and the humanity with which he practiced his profession.

During World War I he served as an officer of the Medical Corps of the United States Army. He was a diplomate of the American Academy of Otolaryngology, a member of the Knights of Columbus, the American Laryngological, Rhinological and Otological Society, and many civic organizations. He was very active in his support of the Central Virginia Speech and Hearing Center and of the Holy Cross School.

Be it further resolved: That we the members of the Lynchburg Academy of Medicine regret the loss of our distinguished member and extend to his widow and family our sincere and deepest sympathy.

It is with a feeling of great loss that your committee presents these resolutions to the Lynchburg Academy of Medicine for its approval.

F. Read Hopkins, M.D., *Chairman*
Edwin A. Harper, M.D.
Harold L. Riley, Jr., M.D.

Dr. Roberts.

Dr. James Henry Roberts was born in Culpeper, November 18, 1881. Educated in the public schools of that city, he entered Howard University where he graduated from preparatory school in 1902, college in 1906 and the medical school in 1910.

After a year's internship at Freedman's Hospital, he began practice in Roanoke, October 1911 and joined the First Baptist Church where he served on the Board of Trustees for many years.

As an active citizen in the civic, professional and religious life of this city, his many activities included co-founding the Magic City Medical Society and the William A. Hunton Branch of the YMCA where he was on the Board of Management and medical advisor for 19 years.

He assisted in the organization of the Roanoke Community Fund and served as colonel of the black division for three years and was medical advisor and physician to Addison High School teams for 18 years.

He was a co-founder of Burrell Memorial Hospital which opened its doors in March 1915. He served as secretary, vice-president and president of the Hospital Association, and chairman of the Trustees Board, 1918-1936. He also served as Chief of Staff, organizer of the Prenatal Clinic, Chief of the Obstetrical Department, and Assistant Chief of the Gynecological Department.

He was Commissioned First Lieutenant in the U.S.A. Medical Corp during World War I and was head of the examining board at the Burrell Memorial Hospital.

He assisted his wife in organizing the Ladies Auxiliary of the Old Dominion Medical Society and wrote its first constitution. He received many citations and awards from organization, societies, schools, hospitals, etc. He was affectionately called "Doctor Bob" by young and old.

His "Trademark" was the rose that he wore each day in his lapel. His pet expression was "I have been young as you are now, and am now as old as you hope to be".

Dr. Roberts died at his home on October 30, 1969 ending a long and fruitful life of 87 years. He had spent 58 years in service to humanity. Even in death, he wished that humanity could still be served, so it was his request that in lieu of flowers to him, that all contributions be made to Hunton Life Saving Crew.

Be it resolved that the Roanoke Academy of Medicine expresses its deepest sympathy to the family and friends of our beloved colleague that the family be sent a copy of this resolution, and that a copy of this resolution be forwarded to The Medical Society of Virginia.

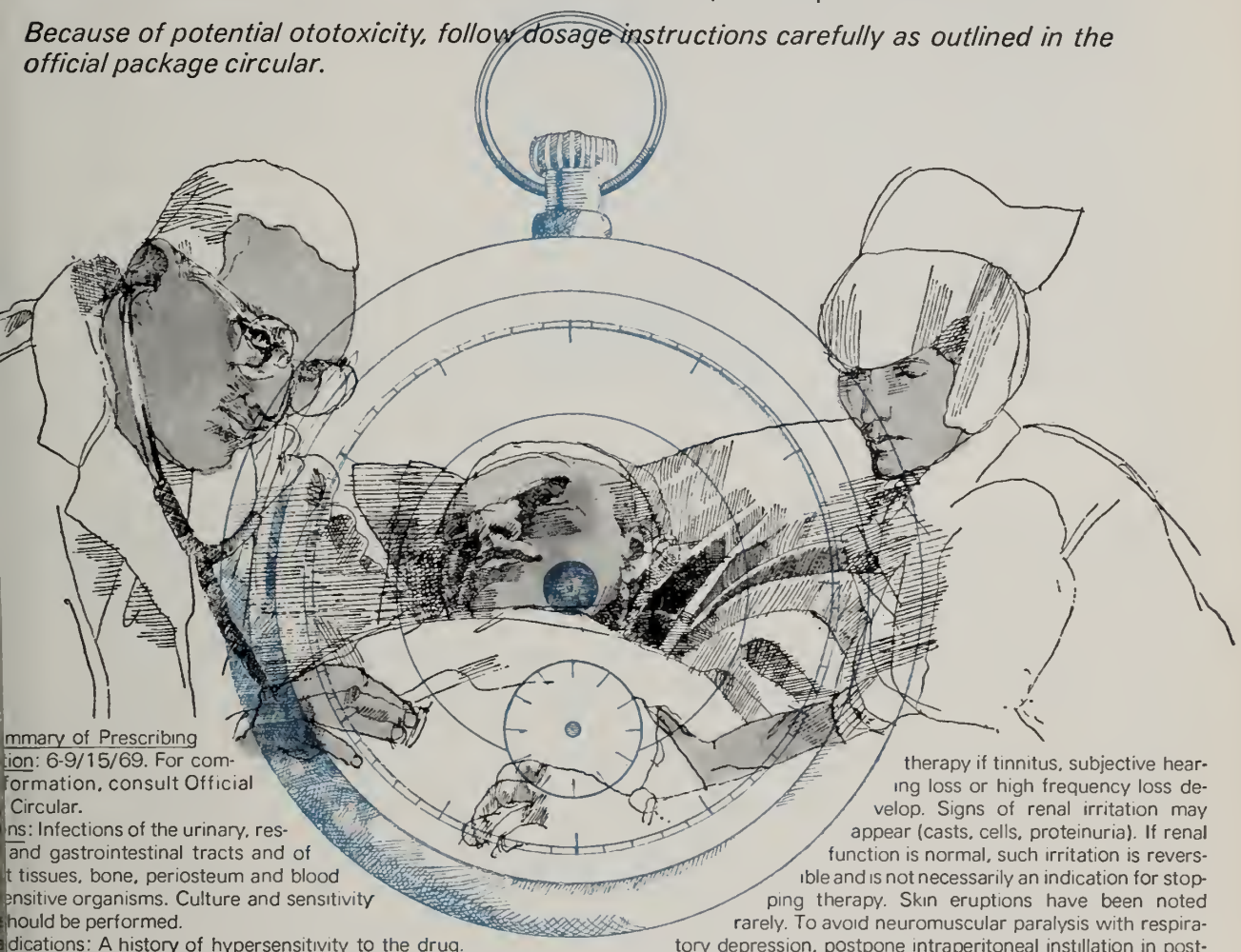
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Alice Virginia Thorpe, M.D.
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Ann M. Urbine, R.N., Director
Joan B. Hovis, R.N., Dir. of Ed.
Elizabeth H. Ellett, R.N., Instructor

Director of Nurses St. Luke's Hospital

Ann M. Urbine, R.N.

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Henry S. Spencer, M.D.
Donald P. King, M.D.

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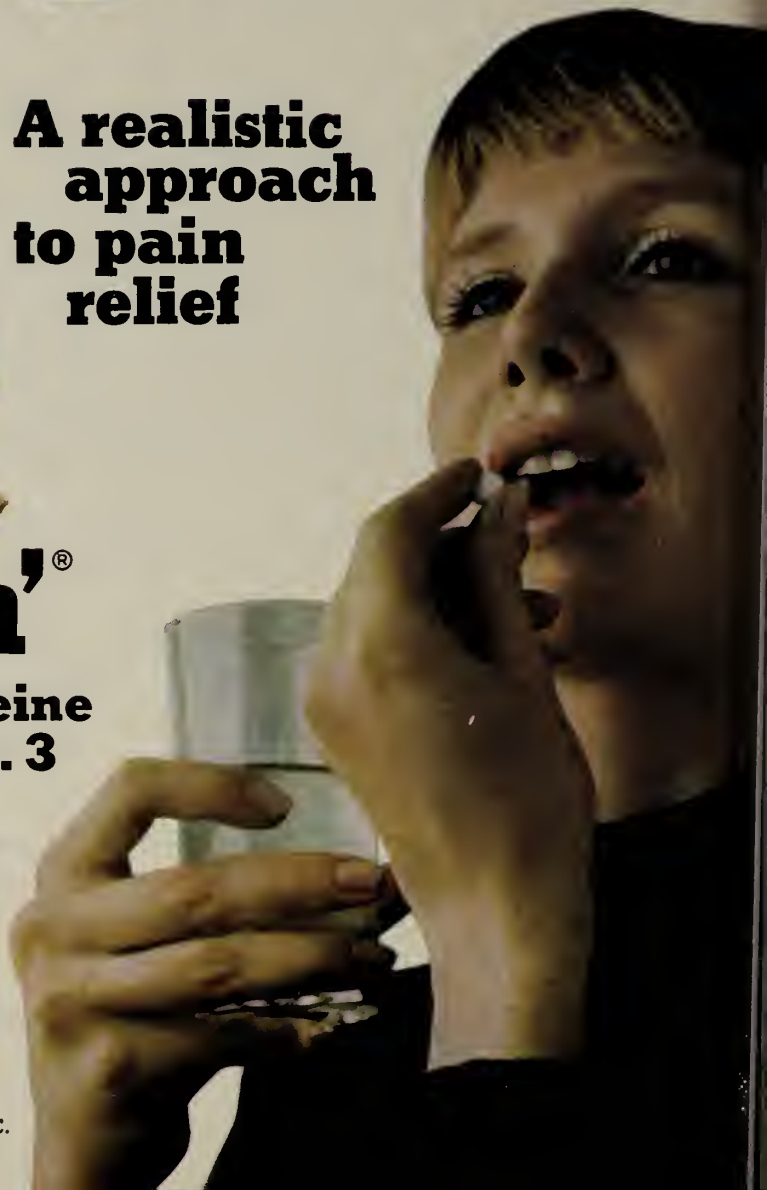


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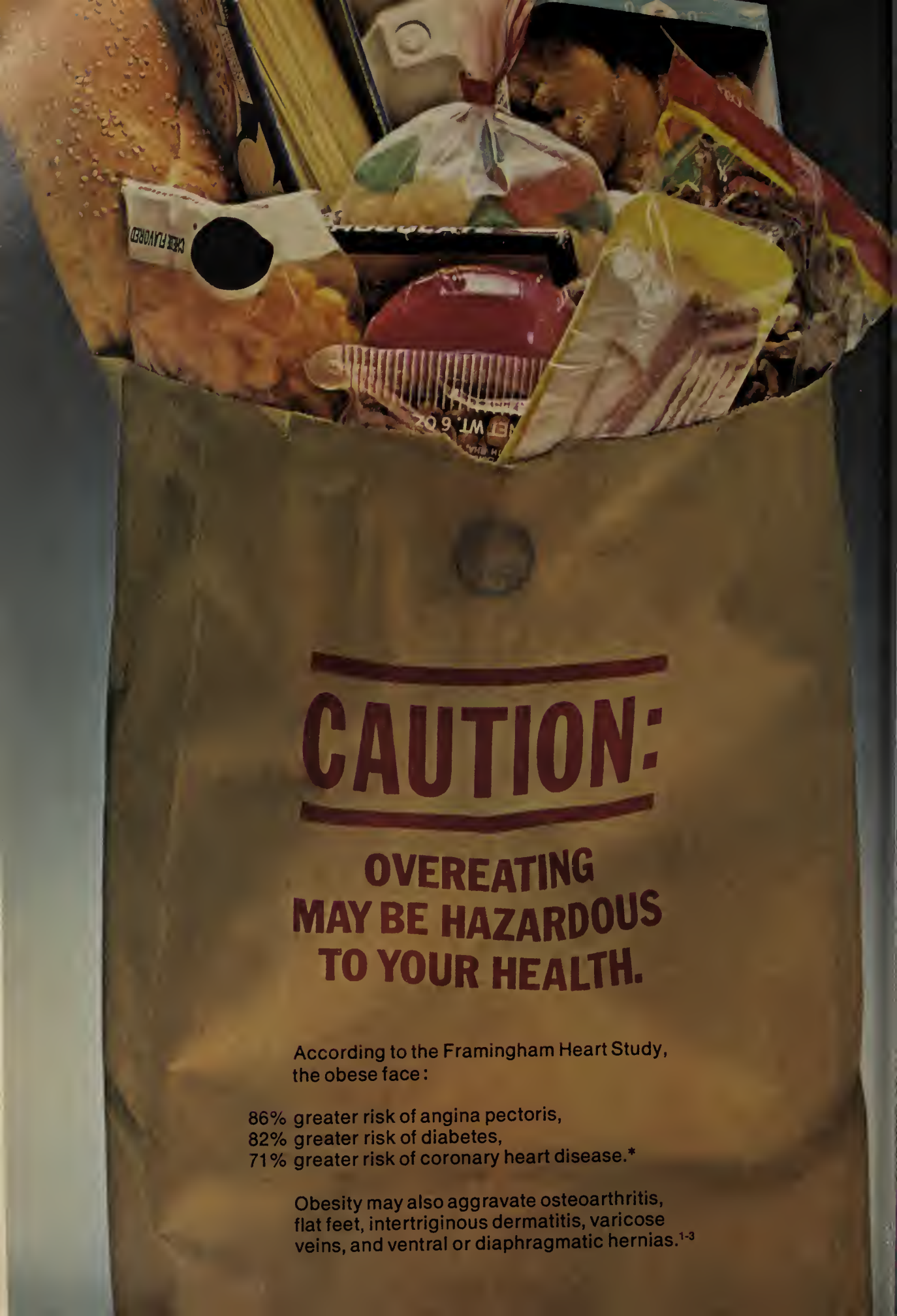
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1. Kannel, W.B., *et al.*: *Circulation* 35:734, 1967.
2. Thomas, H.E., Jr., *et al.*: *Med. Times* 95:1099, 1967.
3. Albrink, M.J., in: Beeson, P.B. & McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Phila.: W.B. Saunders Co., 1967.

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Effectiveness: Because its antibacterial component is DECLOMYCIN® Demethylchlortetracycline, DECLOSTATIN should be equally or more effective therapeutically than other tetracyclines in infections caused by tetracycline-sensitive organisms. The antifungal component, nystatin, protects against superinfection by antibiotic-resistant fungal overgrowth (particularly monilia) in the intestinal tract.

Contraindication: History of hypersensitivity to demethylchlortetracycline or nystatin.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity, onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: One tablet b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Lederle LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York 448-9

—The lowest priced tetracycline—nystatin combination available—



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PROFESSIONAL Seminars, conferences in away-from-it-all setting

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Symptoms subside in 48 to 72 hours!
Itching, burning, discharge, and malodor disappear rapidly... patient's embarrassment, too.

Avoids the disappointment of "the cure that didn't take."
CANDEPTIN is "cidal" as well as "static," it is 100 times more potent *in vitro* than nystatin,[2] and it has achieved culture-confirmed cure rates of 90% and more[3] (even in notoriously difficult-to-treat pregnant patients)[1,3,4]

And two weeks does it.
Usually, CANDEPTIN cures in a single 14-day course of therapy.[3]

the fortnight fungicide

Candeptin®
candicidin

Vaginal Tablets/Ointment

Formula: CANDEPTIN Vaginal Ointment contains a dispersion of candicidin powder equivalent to 0.6 mg. per gm. or 0.06% candicidin activity in U.S.P. petrolatum. 3 mg. of candicidin is contained in 5 gm. of ointment or one applicatorful. CANDEPTIN Vaginal Tablets contain candicidin powder equivalent to 3 mg. (0.3%) candicidin activity dispersed in starch, lactose and magnesium stearate.

Indications: Vaginal moniliasis due to *Candida albicans* and other Candida species.

Contraindications: Patient sensitivity to any of the components. During pregnancy manual tablet insertion may be preferred since the use of the ointment applicator or tablet inserter may be contraindicated.

Caution: Clinical reports of sensitization or temporary irritation with CANDEPTIN Vaginal Ointment or Vaginal Tablets have been extremely rare. To avoid reinfection, it is recommended that the patient refrain from sexual intercourse during treatment or the husband wear a condom.

Dosage: One vaginal applicatorful of CANDEPTIN Ointment or one Vaginal Tablet is inserted high in the vagina, twice a day, in the morning and at bedtime, for 14 days. Treatment may be repeated if symptoms persist or reappear.

Dosage forms: CANDEPTIN Vaginal Ointment is supplied in 75 gm. tubes with applicator (14-day regimen requires 2 tubes). CANDEPTIN Vaginal Tablets are packaged in boxes of 28, in foil, with inserter—enough for a full course of treatment. Store under refrigeration.

Federal law prohibits dispensing without prescription. CANDEPTIN is a registered trade-mark of Julius Schmid, Inc.

References 1. Olsen, J. R.: Journal-Lancet *85*:287 (July) 1965. 2. Lechevalier, H. Antibiotics Annual 1959-1960. New York, Antibiotica, Inc., 1960, pp. 614-618. 3. Giorlando, S. W., Torres, J. F., and Muscillo, G. Am. J. Obst. & Gynec. *90*:370 (Oct. 1) 1964. 4. Friedel, H. J., Maryland M. J. *15*:36 (Feb.) 1966.

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Your ulcer patients and others will confirm it. Specify DICARBOSIL 144's—144 tablets in 12 rolls.

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rheumatoid spondylitis, and osteoarthritis of the hip

do for these patients?

salicylates and rest



INDOCIN®

(INDOMETHACIN | MSD)

helps relieve pain, fever,
swelling, and tenderness

Please see new prescribing information on following page.



REVISED PRESCRIBING INFORMATION

IMPORTANT NOTE: INDOCIN (Indomethacin, MSD) cannot be considered a simple analgesic and should not be used in conditions other than those recommended under Indications. The drug should not be prescribed for children because safe conditions for use have not been established.

General Adverse Effects: Because of the high potency of the drug and the variability of its potential to cause adverse reactions, the following are strongly recommended: 1) the lowest possible effective dose for the individual patient should be prescribed. Increased dosage tends to increase adverse effects, particularly in doses over 150-200 mg/day, without corresponding clinical benefits; and 2) careful instructions to, and observations of, the individual patients are essential to the prevention of serious and irreversible, including fatal, adverse reactions, especially in the aging patient.

Indications: Symptomatic relief of adult rheumatoid and degenerative joint disease unresponsive to adequate trial of salicylates and other measures of established value, such as appropriate rest. Has been found effective in active stages of: 1) moderate to severe rheumatoid arthritis including acute flares of chronic disease, 2) moderate to severe rheumatoid (ankylosing) spondylitis, and 3) moderate to severe degenerative joint disease of the hip (osteoarthritis of the hip). Has been found effective in relieving pain and reducing fever, swelling, and tenderness in acute gouty arthritis in selected patients. May enable reduction of steroid dosage in patients receiving steroids for the more severe forms of rheumatoid arthritis; in such instances the steroid dosage should be reduced slowly and the patients followed very closely for any possible adverse effects.

Contraindications: Children 14 years of age and under; pregnant women and nursing mothers; active gastrointestinal lesions or history of recurrent gastrointestinal lesions; allergy to aspirin and indomethacin.

Warnings: *Gastrointestinal Effects:* Because of the occurrence and, at times, severity of gastrointestinal reactions, be continuously alert for any sign or symptom signaling a possible gastrointestinal reaction. The risks of continuing therapy with INDOCIN in the face of such symptoms must be weighed against the possible benefits to the individual patient. Gastrointestinal effects may be reduced by giving the drug immediately after meals, with food, or with antacids. Use greater care in aging patients.
Ocular Effects: Corneal deposits and retinal disturbances, including those of the macula, have been observed in some patients on prolonged therapy. Discontinue therapy if such changes are observed. Ophthalmologic examination at periodic intervals is desirable in patients on prolonged therapy.
Central Nervous System Effects: INDOCIN (Indomethacin, MSD) may aggravate psychiatric disturbances, epilepsy, and parkinsonism, and should be used with considerable caution in patients with these conditions. If severe CNS reactions develop, discontinue the drug.

Precautions: Blurred vision may be a significant symptom that warrants a thorough ophthalmologic examination. Patients should be cautioned about engaging in activities requiring mental alertness and motor coordination, as driving a car. Headache which persists despite dosage reduction requires complete cessation of the drug. May mask the usual signs and symptoms of infection; therefore, the physician must be continually on the alert for this and should use the drug with extra care in the presence of existing controlled infection. After the acute phase of the disease is under control, an attempt to reduce the daily dose should be made repeatedly until the patient is off entirely.

Adverse Reactions: *Gastrointestinal Reactions:* Single or multiple ulcerations of the esophagus, stomach, duodenum, or small intestine, including perforation and hemorrhage, with fatalities in some instances; gastrointestinal bleeding without obvious ulcer formation; perforation o preexisting sigmoid lesions (diverticulum, carci noma, etc.); rarely, increased abdominal pain i ulcerative colitis patients or development of ul cerative colitis and regional ileitis; gastritis which may persist after the cessation of th drug; nausea, vomiting, anorexia, epigastric dis tress, abdominal pain, and diarrhea.
Eye Reactions: Corneal deposits and retinal dis turbances, including those of the macula, hav been observed on prolonged therapy; blurring c vision.
Hepatic Reactions: Rarely, toxic hepatitis an jaundice, including some fatal cases.
Hematologic Reactions: Aplastic anemia, hem lytic anemia, bone marrow depression, agranul cytosis, leukopenia, and thrombocytopenic pu pura. Since some patients manifest anemia se ondary to obvious or occult gastrointestin bleeding, appropriate blood determinations a recommended.
Hypersensitivity Reactions: Acute respiratory di tress, including dyspnea and asthma; angiiti pruritus; urticaria; angioedema; skin rashes.
Ear Reactions: Hearing disturbances, deafnes tinnitus.
Central Nervous System Reactions: Psychotic e sodes, depersonalization, depression, coma, co vulsions, peripheral neuropathy, drowsine mental confusion, lightheadedness, dizzine headache.
Cardiovascular-Renal Reactions: Edema, elevati of blood pressure, hematuria.
Dermatologic Reactions: Loss of hair, erythe nodosum.
Miscellaneous: Rarely, vaginal bleeding, hyp glycemia, glycosuria, ulcerative stomatitis, a epistaxis.

Supplied: Capsules containing 25 mg indome acin each, in bottles of 100 and 1000; capsu containing 50 mg indomethacin each, in bott of 100.

For more detailed information, consult your Me Sharp & Dohme representative or see the pack circular.

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outh may have the edge in glamour. But BUTISOL odium (sodium butabarbital) has the solid qualities ou would expect of an anti-anxiety agent whose apabilities are thoroughly established:

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o wonder BUTISOL Sodium has remained, year er year, among the 100 most frequently prescribed edications. Its relaxing sedative effect is often that's needed: to help the usually well-adjusted tient cope with temporary stress... or to lieve the anxiety associated with hypertension, coronary disorders, premenstrual tension, surgical procedures, functional GI disorders, and the strains of aging.

Perhaps this is why so many physicians have maintained BUTISOL Sodium as a consistent favorite.

Contraindications: Porphyria or sensitivity to barbiturates.
Precautians: Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression.
Adverse Reactians: Drowsiness at daytime sedative dose levels, skin rashes, "hangover" and systemic disturbances are seldom seen.
Warning: May be habit forming.
Usual Adult Dasage: For daytime sedation, 15 mg. to 30 mg. t.i.d. or q.i.d. Far hypnosis, 50 mg. to 100 mg.
Available as: Tablets, 15 mg., 30 mg., 50 mg., 100 mg.; Elixir, 30 mg. per 5 cc. (alcohol 7%).
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I don't feel
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Young heads and stomachs often can't manage the pace of hurry-up-and-stop for the light... or going up hill, down hill, and around the curve. All too quickly a pleasant drive can become an upsetting trip. *Motion sickness makes children—and their parents—absolutely miserable.*

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Bonine protects most patients—young or old—against nausea and vomiting up to 24 hours with a single dose. Pleasant-tasting Bonine tablets are chewable. They can be taken anytime, anywhere, without water. In difficult cases, multiple daily doses may be necessary for maximum response.

Precautions: Although the incidence of drowsiness and atropine-like side effects such as dry mouth and blurring of vision is low, the physician should alert the patient to the need for due precautions when engaging in activities where alertness is mandatory. *Use in women of childbearing age:* In weighing potential benefits vs. risk in women of childbearing age, consider the fact that a review of available animal data reveals that meclizine exerts a teratogenic response in the rat. In one study a dose of 50 mg./kg./day (50 times the maximum recommended human dose) produced cleft palate in 2 of 87 fetuses when administered to the rat at critical times during the first 15 days of gestation. At doses of 125 mg./kg./day, meclizine will produce 100% incidence of cleft palate in the rat. At doses of 25 mg./kg./day, decreased calcification of the vertebrae and relative shortening of the limbs were also produced in the rat, but experts disagree as to whether this is a teratogenic response. While available clinical data are inconclusive, scientific experts are of the opinion that this drug may possess a potential for adverse effects on the human fetus. Consequently, consideration should be given to initial use of a nonphenothiazine agent that is not suspected of having a teratogenic potential. In any case, the dosage and duration of treatment should be kept to a minimum.

Supply: 25 mg. scored tablets.

More detailed professional information available on request.

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Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,

increases the flow of digestive juices,

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extra-dietary vitamin B_{12},

protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy. Dilute with two or more equal volumes of water.*

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Synthroid®
(sodium levothyroxine)

Indications: SYNTHROID (sodium levothyroxine) is specific replace ment therapy for diminished or absent thyroid function resultin from primary or secondary atrophy of the gland, congenital defec surgery, excessive radiation, or antithyroid drugs. Indications fc SYNTHROID (sodium levothyroxine) Tablets include myxedem hypothyroidism without myxedema, hypothyroidism in pregnanc pediatric and geriatric hypothyroidism, hypopituitary hypothyroi ism, simple (non-toxic) goiter, and reproductive disorders associate with hypothyroidism. SYNTHROID (sodium levothyroxine) Injectio is indicated in myxedematous coma and other thyroid dysfunctior where rapid replacement of the hormone is required. When a pa tient does not respond to oral therapy, SYNTHROID (sodium lev thyroxine) injection may be administered intravenously to avoid ar question of poor absorption by either the oral or the intramuscul route.

Precautions: As with other thyroid preparations, an overdosa may cause diarrhea or cramps, nervousness, tremors, tachycardi vomiting and continued weight loss. These effects may begin aft four or five days or may not become apparent for one to three week Patients receiving the drug should be observed closely for signs thyrotoxicosis. If indications of overdosage appear, discontin medication for 2-6 days, then resume at a lower dosage level. patients with diabetes mellitus, careful observations should be ma for changes in insulin or other antidiabetic drug dosage requi ments. If hypothyroidism is accompanied by adrenal insufficiency, Addison's Disease (chronic subcortical insufficiency), Simmond Disease (panhypopituitarism) or Cushing's syndrome (hyperadre alism), these dysfunctions must be corrected prior to and duri SYNTHROID (sodium levothyroxine) administration. The dr should be administered with caution to patients with cardiovascu disease; development of chest pains or other aggravations of c diovascular disease requires a reduction in dosage.

Contraindications: Thyrotoxicosis, acute myocardial infarction.

Side effects: The effects of SYNTHROID (sodium levothyroxi therapy are slow in being manifested. Side effects, when they occur, are secondary to increased rates of body metabolism: swe ing, heart palpitations with or without pain, leg cramps, and wei loss. Diarrhea, vomiting, and nervousness have also been observ Myxedematous patients with heart disease have died from abr increases in dosage of thyroid drugs. Careful observation of patient during the beginning of any thyroid therapy will alert physician to any untoward effects.

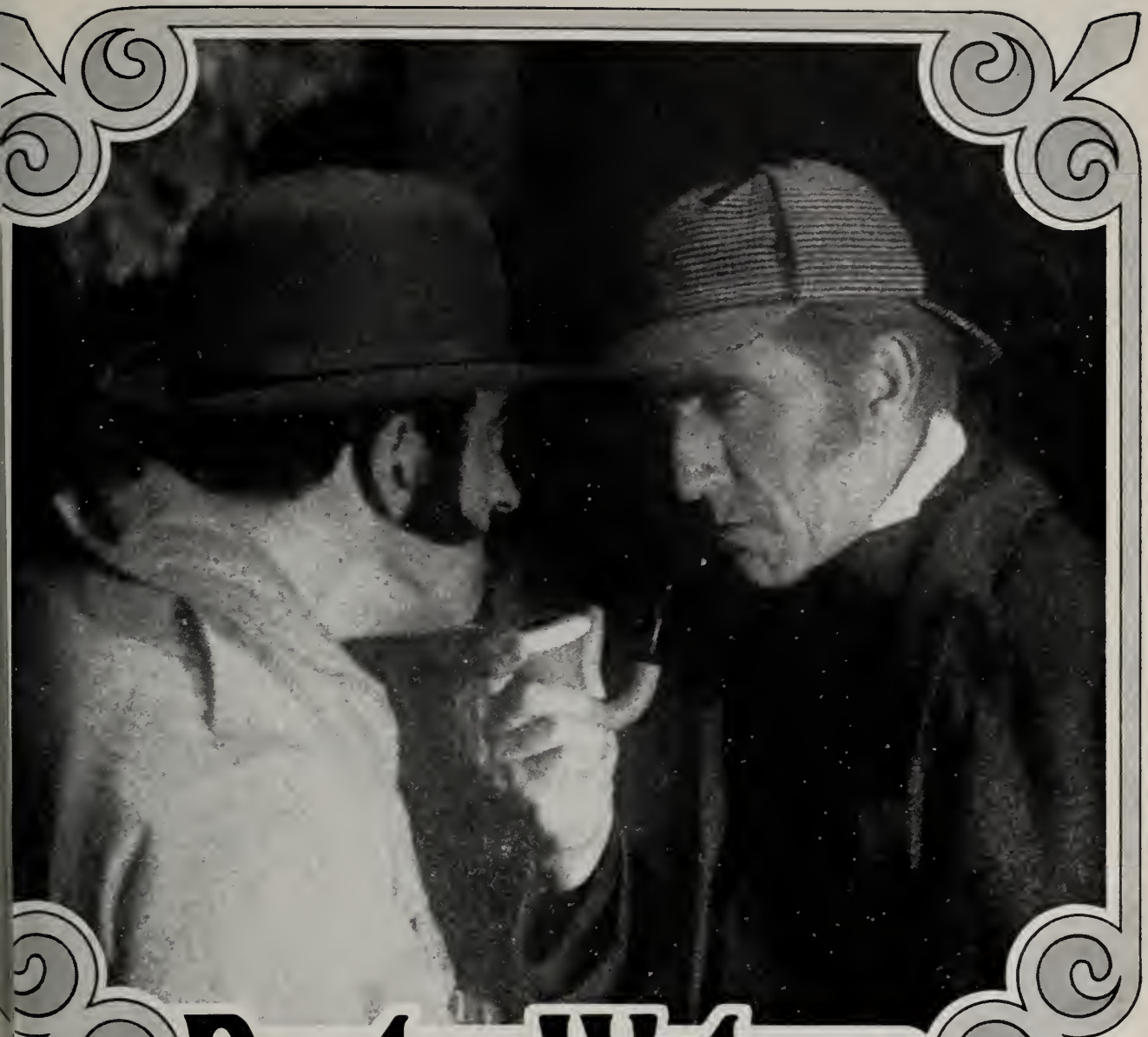
In most cases with side effects, a reduction in dosage followec a more gradual adjustment upward will result in a more accu indication of the patient's dosage requirements without the app ance of side effects.

Dosage and Administration: The activity of a 0.1 mg. SYNTHR (sodium levothyroxine) TABLET is equivalent to approximately grain thyroid, U.S.P. Administer SYNTHROID tablets as a si daily dose, preferably after breakfast. In hypothyroidism wit myxedema, the usual initial adult dose is 0.1 mg. daily, and ma increased by 0.1 mg. every 30 days until proper metabolic balan attained. Clinical evaluation should be made monthly and measurements about every 90 days. Final maintenance dosage usually range from 0.2-0.4 mg. daily. In adult myxedema, sta dose should be 0.025 mg. daily. The dose may be increased to mg. after two weeks and to 0.1 mg. at the end of a second two w The daily dose may be further increased at two-month interva 0.1 mg. until the optimum maintenance dose is reached (0.1-1.(daily).

Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.15 mg., 0.2 mg mg., 0.5 mg., scored and color-coded, in bottles of 100 and 500. I tion: 500 mcg. lyophilized active ingredient and 10 mg. of Man N.F., in 10 ml. single-dose vial, with 5 ml. vial of Sodium Chl Injection, U.S.P., as a diluent.

SYNTHROID (sodium levothyroxine) INJECTION may be adr tered intravenously utilizing 200-400 mcg. of a solution conta 100 mcg. per ml. If significant improvement is not shown the f ing day, a repeat injection of 100-200 mcg. may be given.

FLINT LABORATORIES
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Doctor Watson exposes a double agent

...on the Embankment. Two figures emerge into silhouette against a ...d street lamp. The flare of a match reveals the profile of Sherlock ...es. As he lights his calabash, his companion speaks:

"B...Jove, Holmes, that amazing intuition of yours has proved right ...a. What we're looking for is a single entity. I thought we were ...ng with several others—even twins. But now—I'd say we've ...vered a double agent."

"T...me more, Watson, and be quick about it!"

W...son withdraws a folded paper from inside his greatcoat, and ...aloud from it):

"T... key to the whole cypher is SYNTHROID (sodium levothy-...e)"...

"S...h! Watson, not so loud! You'll alert our quarry."

W...son continues): "A single entity that serves two functions."

"A...aster stroke, Watson."

"F...ow along, Holmes. In the neighborhood of 95% of the circulat-...yroid hormone is levothyroxine—T_4 as you call it. T_4 is bound ...roxine-binding proteins in the serum. It becomes available only ...ally to tissue cells—as free thyroxine."

"Is that why there's such a smooth, predictable response, Watson?"

"Quite! With agent T_4, SYNTHROID, the chances of a precipitous rise in metabolic rate are lessened."

"But how does 'free' thyroxine fit into the picture?"

"Well, Holmes, you might call it the tissue thyroid hormone—because 'free' thyroxine (that is, thyroxine not bound to protein) is active at the tissue level. It is gradually released from thyroxine-binding proteins. Each daily dose of SYNTHROID is mostly bound to thyroid-binding proteins, and slowly released as 'free' thyroxine—the form in which it is metabolically active."

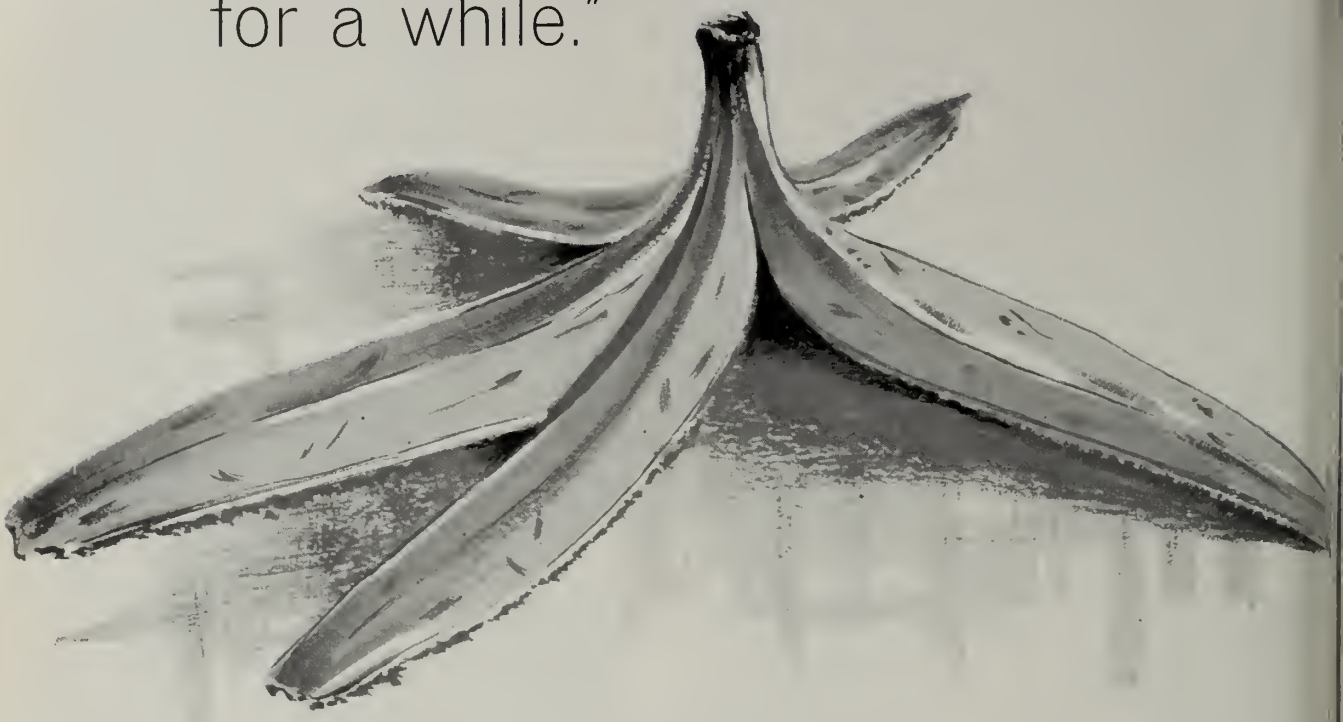
"Magnificent, Watson! So protein-bound thyroxine is the major form of circulating thyroid hormone, and it is released as 'free' thyroxine. And that's why SYNTHROID is able to simulate the normal process so artfully. Q.E.D."

"Not so fast, Holmes. SYNTHROID works for the *physician*, too. Because its dosage is more precisely controllable, and because response is so smooth and predictable, the *doctor* gets fewer phone calls in the wee hours from agitated patients. Both parties get more sleep!"

"Comforting, my dear doctor, to know that SYNTHROID, the 'single agent,' cleverly does the job of two."

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"Sorry Doctor. But you're going to be laid up for a while."



■ With that "switch", Doctor, your income stops.

But your everyday expenses keep right on . . . in your home and at your office.

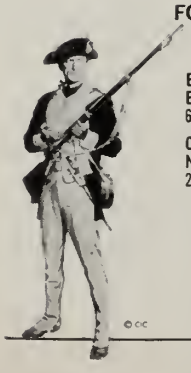
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Painful night leg cramps...

unwelcome bedfellow for any patient– including those with arthritis, diabetes or PVD

One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON-MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Quinamm™
(quinine sulfate 260 mg., aminophylline 195 mg.)

Specific therapy for night leg cramps



Treating vaginitis is as easy as AVC

Trichomonads...Monilia...Bacteria

You can depend on AVC—the comprehensive therapy that acts against all three major vaginal pathogens.

Monilia emerging as a major therapeutic problem—
recent studies report increased incidence, attributed in part to the use of oral contraceptives,[1-4] broad-spectrum antibiotics[5-9] and prolonged use of corticosteroids.[7]
recent evidence establishes high rate of microbiological and clinical cure with AVC.[9-11]

Comprehensive — Effective

The published record and more than two decades of clinical experience clearly establish the therapeutic value of AVC in vaginitis/cervicitis and vaginal surgery.

Easy as AVC

Contraindicatians: Known sensitivity ta sulfanamides.
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Dasoge: One applicatarful ar ane suppasitary intravaginally ance ar twice daily.
Supplied: Cream—Faur-ounce tube with ar withaut applicatar. Suppasitaries—Bax of 12 with applicatar.

References: 1. Gardner, H. L.: J. Miss. M.A. 8:529, 1967. 2. Porter, P. S., ond Lyle, J. S.: Arch. Dermot. 93:402, 1966. 3. Walsh, H.; Hildebrandt, R. J., and Prystowsky, H.: Am. J. Obst. & Gynec. 93:904, 1965. 4. Vaginitis and the Pill: J.A.M.A. 196:731, 1966. 5. Guerriera, W. F.: South. M.J. 56:390, 1963. 6. Seelig, M. S.: Am. J. Med. 40:887, 1966. 7. Ta-doy's Drugs, New Yark, Grune & Strattan, Inc., 1965, p. 316. B. Gray, L. A., and Barnes, M. L.: Am. J. Obst. & Gynec. 92:125, 1965. 9. Solerno, L. J.; Ortiz, G., ond Turkel, V.: Vaginitis: A Diagnastic and Therapeutic Appraach, Scientific Exhibit, presented at the 115th Annual A.M.A. Convention, Chicago, Illinais, June 1966. 10. Walsh, J. C.; Sheffery, J. B., ond Wilsan, T. A.: Med. Ann. D.C. 37:358, 1968. 11. Nugent, F. B., and Myers, J. E.: Pennsylvania Med. 69:44, 1966.

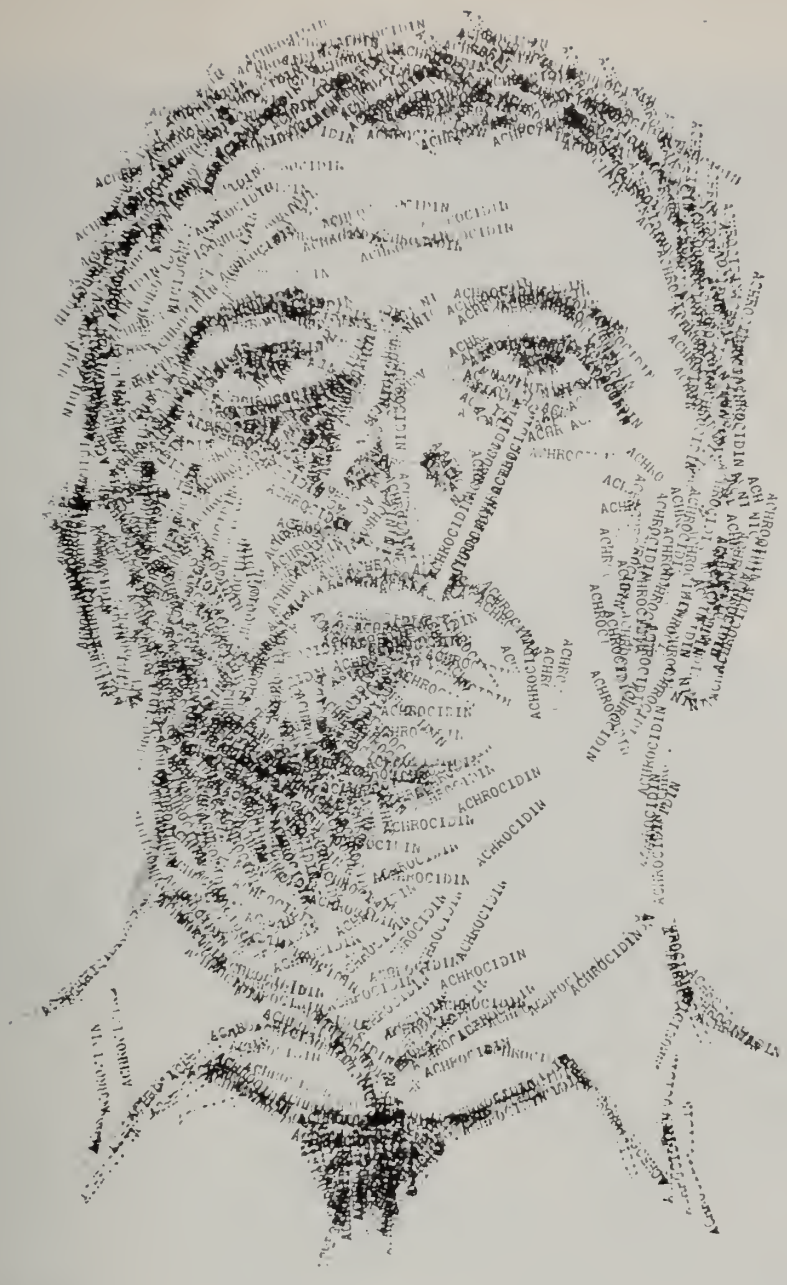
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Guest Editorial . . . .

Intravenous Colchicine

IN 1951 in the Guest Editorial for the Virginia Medical Monthly, the use of intravenous colchicine in the treatment of gout was first reported by the author. Its safety and swift action was stressed. Prior to this, colchicine combined with potassium iodide and sodium salicylate in a 20 cc ampoule was occasionally used.

Since 1951, I have continued to administer intravenous colchicine extensively. During 40 years of administering this drug, we have not obtained toxic reactions of any kind.

One precaution, however, cannot be overemphasized. Namely, the need to be careful to avoid infiltration around the vein. In case of an error, severe pain appears at the site, sometimes at once, but much worse on the following day. It may progress to severe cellulitis and thrombophlebitis. The pain may continue for six weeks.

During a ten-year period—1955-1965, 216 patients with gout were admitted to St. Lukes Hospital, New York City. Seventy-seven of these with an average age of 66.5 years were given intravenous colchicine. All reacted well and there were no untoward reactions. Three times this number have been treated in my office since 1947 when, at my suggestion, Eli Lilly made the 2 cc ampoule containing 1 mg. of colchicine. The usual dose is 2 ampoules. Relief is often obtained within 10 minutes of the administration of the drug.

Regarding the diagnosis of gout: It should be mentioned that a positive therapeutic response to intravenous colchicine in gout becomes the most certain diagnostic sign in a case of acutely inflamed joint. Concerning the toxic effect of long term treatment, our experience has failed to reveal any such effect. I summarized the laboratory data from four extreme cases for evidence of any adverse changes in the blood, liver, or kidneys.

The years of the first attack of gout dated back to 1930- 1932- 1937- and 1956 respectively. They had received 3.65, 5.84, 10.5 and 10.95 grams of oral colchicine respectively, which was then followed by many intravenous injections. There were no changes in CBC, blood urea nitrogen, serum bilirubin, serum uric acid, SGOT, SGPT and urine analysis. They received 100, 160, 342 and 438 mgs. of IV colchicine respectively.

These four patients represent 130 years of gout, a total of 90 hospital admissions and over 500 mg of colchicine given intravenously without either local or systemic reactions.

It should be emphasized that since the introduction of allopurinal (zyloprim) as a prophylactic in the treatment of gout, none of the four patients discussed here has had to enter the hospital for gout. Attacks of gout in the gouty have lessened considerably.

In summary: It may be stated that the use of intravenous colchicine results in a rapid diagnosis in clinic patients. It avoids gastrointestinal symptoms. It is especially useful in surgical patients who cannot take oral medication and it is useful as a prophylactic measure prior to operation in gouty patients who are prone to acute attacks of gout after operation.

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Acute Rheumatic Fever in Virginia— Has It Changed in the Last 20 Years?

CAROLYN M. McCUE, M.D.
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Although the incidence and mortality of rheumatic fever has been decreasing during the past 30 years, it remains a major cause of serious heart disease. Much more can be done, as shown by this study, to prevent this disease.

THE DIAGNOSIS OF ACUTE RHEUMATIC FEVER was verified in 142 children admitted to the Medical College of Virginia Hospitals in the three year period, January 1, 1965 to January 1, 1968. The pattern of referral, family history, epidemiology, initial symptoms, original and residual heart disease, therapy and current status are presented. Parameters on these patients are compared to 225 similar children studied 20 years earlier. In 1969, it is discouraging to find so many new cases, many of which might have been prevented. The need for reducing both new and recurrent cases and the hope for amelioration of the resultant crippling rheumatic heart disease in Virginia in the future stimulated this review.

Historical Background

The Rheumatic Fever Program, initiated by Dr. Louise Galvin in 1940, under the auspices of the Virginia State Health Department, Crippled Children's Bureau, received 1205 referrals from physicians from its onset in May, 1940 to June, 1947. Patients were accepted until 21 years of age. The majority were sent for diagnosis and therapy because rheumatic fever was suspected: in 504 it was confirmed. A smaller percentage had congenital heart disease (7.2%). As the need for this consultative service became apparent, other state clinics were added geographically scattered throughout Virginia.* All have grown and congenital clinics have been separated. In 1968, the Richmond Clinic saw 1899 pediatric cardiology patients: approximately 80% who had congenital heart disease and 20% who had rheumatic fever and/or rheumatic heart disease.

Between 1940 and 1947, 225 cases of acute rheumatic fever had been seen in the Richmond Rheumatic Fever Clinic and followed for an average of 5.95 years. These children who formed the basis of the preliminary report on rheumatic fever in Virginia[1] had been seen for a minimum of three years or until death. Very sick children, requiring hospital care or diagnostic problems from all parts of the State, were referred directly by their local physicians or by one of the screening clinics.

Although rheumatic fever is not universally a reportable disease, the data available

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* Harrisonburg Clinic established 1944; Suffolk 1945; Roanoke 1946; Bristol 1949; Charlottesville (UVA) 1950.

suggests the incidence and mortality have decreased greatly in the United States and most parts of the world in the last 20 to 30 years. The United States Public Health report estimates a 60% decrease in the death rate. The declining prevalence is not as striking. There remain 1.5 million cases of residual rheumatic heart disease in this country today.[2] (Table I)

TABLE I

CUMULATIVE MORTALITY RATES IN ACUTE RHEUMATIC FEVER FROM 4 SERIES TABULATED BY LENDRUM[3]

Approximate Decades	Mortality During Initial Attack	1 Year Later	10 Years Later
1930-1940	3.5%	8%	20-24%
1950-1960+	1%	1%	3%

+patients on prophylaxis

Standards of living have improved, the streptococci are more easily identified and specific antibiotic therapy is more widely used for both primary and secondary prevention. Is this disease also decreasing in our own State? Without compulsory registration of rheumatic fever patients, hospital and clinic records are our best source of information. The diagnosis, often questionable, adds to the problem of accurate registration. The best guide is the Jones criteria,[4] originally devised by a Virginian, Dr. T. Duckett Jones. Modification of these criteria by a Committee of the American Heart Association in 1967 stressed the evidence of preceding streptococcal infection as a necessary component, but the final diagnosis remains a clinical decision since there is no pathognomonic laboratory test. Prevention of rheumatic fever is the ultimate aim. In 1969, early diagnosis and adequate treatment of the preceding streptococcal infection is the most effective preventative method. Many factors have contributed to the decline in death rate and residual rheumatic heart disease in the last 20 years. Some relate to medical progress while others are economic. Physicians in Virginia have benefited by the following:

1. Basic standards of living have improved both in our State and in our nation today. Rheumatic fever occurs about ten times more frequently in slum areas than in communities with more adequate housing and less crowding.

2. Penicillin and other bactericidal drugs are now readily available, inexpensive and helpful in primary and secondary prevention of rheumatic fever and physicians have been educated in their more adequate use in streptococcal infections and in long term prophylaxis. While sulfadiazine, a bacteriostatic drug, was introduced for secondary prevention in 1939, penicillin did not become available until the late 1940's.

3. The etiologic relationship of rheumatic fever to the Beta hemolytic streptococcus has been proven. Although we do not understand all the immunologic factors of host response, we know rheumatic fever does not occur either primarily or in a secondary attack without this organism. This makes identification of streptococcal illness imperative. Ten state supported streptococcal laboratories throughout Virginia provide free throat cultures.** Ten years ago, three central laboratories (Richmond, Abingdon and Luray) examined 2,176 throat cultures of which 22.8% were positive for Beta hemolytic streptococci. In 1968, these same three laboratories examined 36,039 cultures finding 20% positive Beta hemolytic streptococci. These three laboratories also perform antistreptolysin titres. The instance of first attacks of rheumatic fever has been shown to be inversely proportional to the use of such laboratories.[6] More than half of new cases are potentially preventable.

4. Many refinements in the early diagnosis of rheumatic fever have occurred. Early manifestations may be misleading, but purification of the diagnosis of rheumatic fever is possible with advanced laboratory techniques. Conditions such as lupus ery-

**Fairfax County; Norfolk City; Richmond City; Arlington; Luray; Abingdon; Central Laboratory, Richmond; Petersburg; Roanoke; Portsmouth.

thematosus, rheumatoid arthritis, allergic and hematologic diseases have specific tests and are less likely to be included. Physicians are recognizing the necessity for early, certain diagnosis. New cases of rheumatic fever continue to occur and old rheumatic heart disease continues as the greatest cause of death under the age of 40 from cardiac causes.

Measurement of the degree of "carditis" has been highly refined. Functional murmurs can be carefully separated from minimal murmurs of acute mitral or aortic valvulitis. A vibratory murmur of an innocent type must not be mistaken for early rheumatic mitral insufficiency. It makes a great difference in therapy and prognosis. Children who have organic murmurs require careful grading into categories of severity. This will determine drug therapy, optimum period of rest and prognosis. Awareness of the subtle manifestations of acute rheumatic fever has prompted physicians to use consultative facilities and diagnostic clinics more fully.

5. Comprehensive management of cases of acute rheumatic fever with antibiotics, suppressive therapy, convalescent care in hospitals and follow-up care in cooperation with health departments and their nurses has become available to all economic groups. Federal and state funds are available for acute and convalescent care of children with acute rheumatic fever in hospitals associated with medical centers in Virginia.

Material and Methods

Only children admitted to the Medical College of Virginia Hospitals with a confirmed diagnosis of acute rheumatic fever during the period, January 1, 1965, to January 1, 1968, were included in the current study. Each child was referred to the Richmond Pediatric Cardiology Clinic of the State Health Department or to one of the pediatric cardiologists at the Medical College of Virginia. Patients are eligible for care to age 21. Records have been reviewed for pattern of referral, family history, epidemiology, presenting symptoms, laboratory studies, cardiac status and therapy. Nineteen of the 142 cases had a previous attack of rheumatic fever diagnosed elsewhere and were considered active in a second or later attack at the time of this admission. Thirty-five of the 142 were from the Richmond area. The homes of others were widely scattered throughout the State. A well established convalescent rheumatic fever ward with beds for 12 patients led to referral of more distant patients with serious heart disease.

Residual carditis is the most important aspect of this disease. A record of the amount of carditis at the time of the admission to and discharge from the hospital and at the follow-up clinic visit had been recorded. (Table II)

Table II

Categories of Carditis

I	No Heart Disease Diagnosis based on other major and minor criteria. Minor electrocardiographic changes may be present.
II	Mild Heart Disease Mitral insufficiency indicated by apical systolic murmur. No diastolic murmur heard. No significant cardiomegaly. (CT ratio less than 52%)
III	Moderate Heart Disease A diastolic murmur of aortic insufficiency or mitral stenosis with or without a systolic murmur. Moderate cardiomegaly.
IV	Severe Heart Disease Cardiac failure or pericarditis or marked cardiomegaly and valvular damage of rheumatic origin.

The 1948 study of 225 cases by McCue and Galvin[1] used the same diagnostic criteria and tabulated similar data. Clinic follow-up was for a longer period of time (average 5.95 years). Eighty-seven percent of patients were hospitalized but a few were seen only as out-patients. Applicable comparative data with likenesses and differences will be presented.

Results

In the three year period, January 1, 1965, to January 1, 1968, 142 new cases of acute

rheumatic fever were hospitalized at the Medical College of Virginia. The initial referral was received from the

Local Medical Doctor	95
Hospital	15
Out-Patient Clinic and Emergency Room	32

Thirty-five of the 142 cases were from the Richmond area during the three year period. Figure 1 illustrates the distribution during 1967 only.

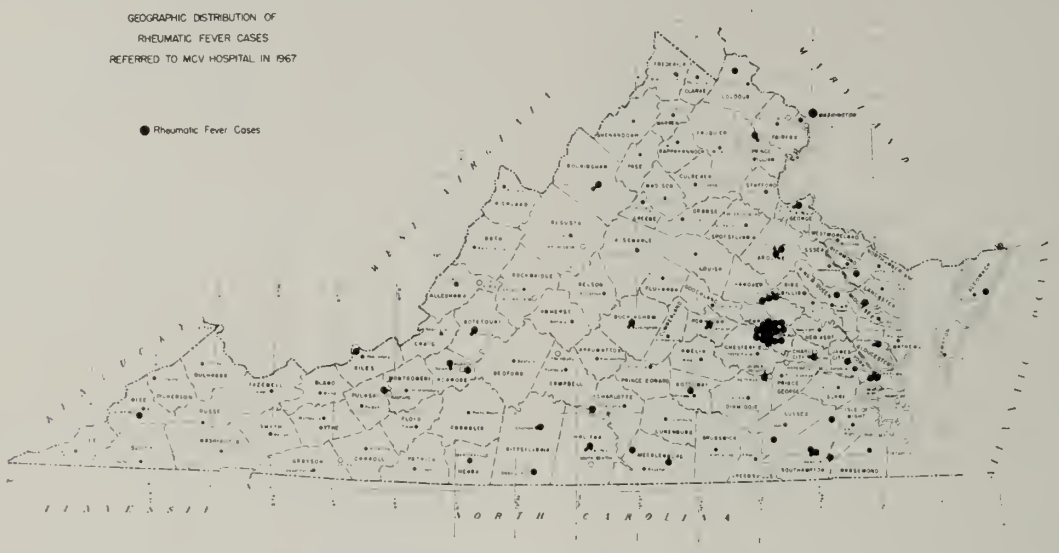


Fig. 1. Geographic distribution of cases in 1967.

Epidemiologic data regarding race, sex, season and age of onset are shown in Figs. 2

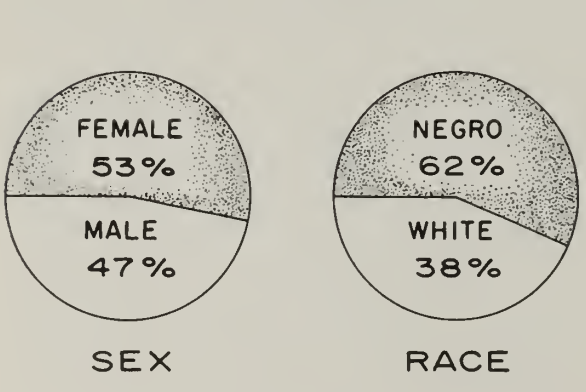


Fig. 2. Sex-Race.

and 3. The average family contained 7 members (Fig. 4). The income level was known for 95 of the 142 patients. Since it was not available in private patients, the $245.00 per month probably reflects an average of the clinic group only.

Recognition of the initiating streptococcal infection which precedes rheumatic fever would prevent this illness in many cases. Clues from the parents' original history were sought. Fifty-four percent had a clear warning of a sore throat or scarlet fever.

Preceding Illness

Sore throat	73
Scarlet fever	4
Other	
Pneumonia	3
Influenza	8
Colds	9
Measles	1
Impetigo	1
Otitis Media	1
Shigellosis	1
Toothache	2
Abscess	2

Therapy for this preceding illness was administered by the referring physician as follows:

Penicillin	75
Penicillin and Aspirin	52
Aspirin alone	16
Steroids with or without penicillin	6

For 123 children, this was a first attack. In 13 of the 19 recurrences, no heart disease

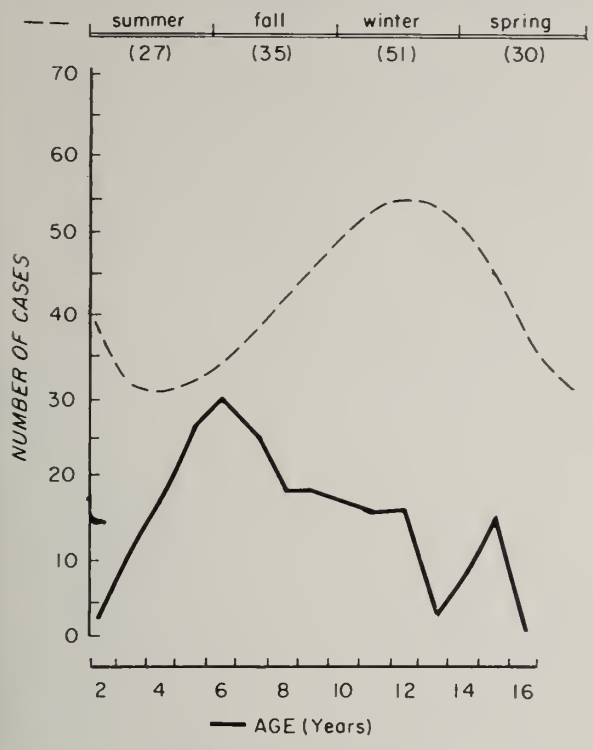


Fig. 3. Season and Age.

was detected; in two it was questionable; four had overt mitral insufficiency. Seven

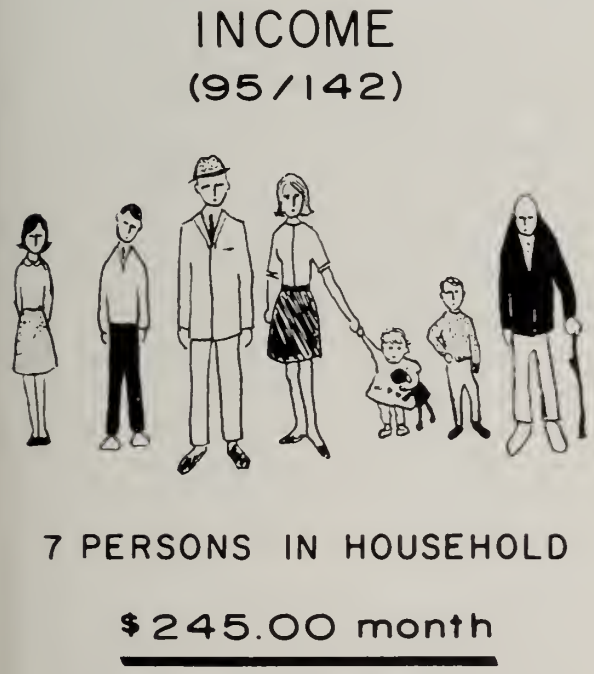


Fig. 4. Environment and economic status. (Income information available in 95 of 142 cases)

had not been maintained on prophylaxis, seven had taken it briefly and then stopped. Only five had taken medication faithfully. It is not surprising that recurrences appear in the 73% who were not treated prophylactically or were treated inadequately.

The family history of rheumatic fever was positive in 19 children (13.4%). In six cases, this involved the immediate family, including siblings or parents.

Clinical manifestations have great importance in a disease without an exact laboratory confirmation. The major and minor manifestations during the acute stage were as follows:

Carditis	88
Alone	30
With Joints	42
Combinations	10
Polyarthritis	91
Chorea	11
Erythema Marginatum	5
Nodules	6
Other	
Epistaxis	9
Abdominal Pain	19
Chest Pain	7
Arthralgia	14

Carditis on admission was demonstrated by the following:

Mitral Insufficiency	85
Aortic Insufficiency	36
Mitral Stenosis, relative or fixed	24
Pericarditis	7
Cardiac Failure	9

A comparison of admission cardiac status with findings on discharge and clinic follow-up are shown in Figure 5. It is notable that 54 cases never showed any evidence of cardiac disease and have remained in category I throughout their hospital stay and follow-up. Only three patients admitted with no heart disease (category I) have shown residual heart damage, two have minimal

mitral insufficiency; one has both mitral and aortic valve disease now.

Thirty-three patients initially classified in category II with minor degrees of mitral insufficiency had a tendency to improve.

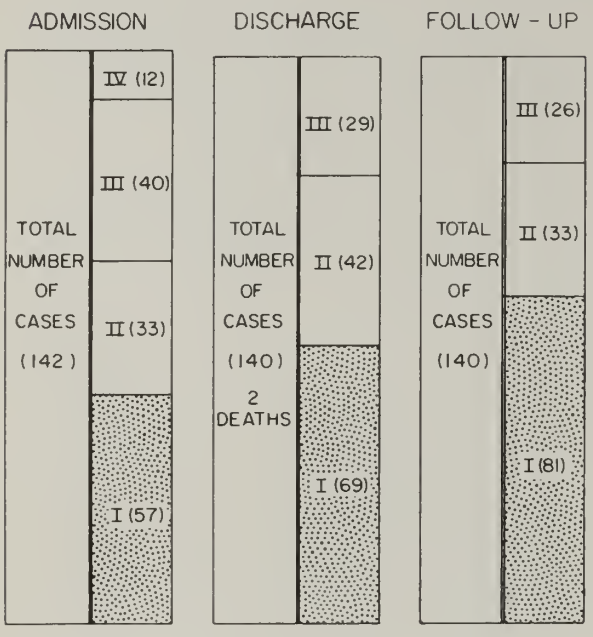


Fig. 5. Cardiac Status.

Fourteen remained the same, but 19 showed no detectable heart disease at the return clinic visit.

Among the 40 patients admitted with category III heart disease, 20 persist in showing diastolic murmurs and/or heart enlargement. Twenty have improved; fourteen now have category II heart disease and six have no heart disease detected.

Twelve children admitted with cardiac failure and/or pericarditis, in addition to severe valvular disease, included two deaths and 10 who have improved. Five are now in category III, two in category II and two in category I with no heart disease detected. The progression of heart disease is illustrated in Figure 5. Follow-up on these patients has been carried out over an average period of 27 months, but to determine the residual cardiac status, further observation will be necessary.

Laboratory studies on admission assisting in the decision for diagnosis revealed the following:

ASO greater than 625	126
C-Reactive Protein positive	62
Elevated sedimentation rate	130
Positive nose and throat culture for Beta streptococci	12
Cardiomegaly by x-ray	52
Electrocardiographic changes	64
Prolonged PR interval	33
White count greater than 10,000	63
Hemoglobin less than 10 grams	31

Treatment programs according to the general plan of Markowitz and Kuttner were adjusted to the individual patient needs. Penicillin (or erythromycin in case of drug allergy) was given to all patients to eradicate the Beta hemolytic streptococci as soon as the diagnosis was made. Aspirin was used for patients with category I or category II classification of heart disease, whereas steroids were reserved for those with more severe carditis in categories III and IV. Patients with chorea received phenobarbital or "tranquilizing" drugs. Aspirin overlapped the steroid therapy in patients with severe heart disease, so the duration of steroids varied from 14 to 60 days with aspirin therapy for four to six weeks. The average length of treatment with aspirin was 39.4 days and with steroids 46.3 days. The drugs were used as follows:

Penicillin or Erythromycin	142
Alone	4
With Aspirin	79
With Aspirin and Steroids	49
With Phenobarbital	10
Digoxin	8

These patients remained in the hospital for an average period of 76 days with a range from two to 194 days. The majority were cared for after the first week in the Convalescent Ward.

Long term prophylaxis has been instituted in all patients as follows:

Benzathine penicillin intramuscularly 1,200,000 units every 28 days	100
Oral penicillin tablets twice daily	31
Sulfadiazine tablets	11

Two recurrences have occurred during the follow-up period in patients with poor drug compliance. One child with chorea recurred after benzathine penicillin was omitted for six weeks. Another child with polyarthritis had a recurrence after no oral penicillin for five months. Neither child has heart disease.

Two deaths occurred during the acute stage. An 11-year-old, white male developed symptoms of influenza and was treated by his local physician briefly with penicillin. He improved slightly, returned to school in spite of arthralgia, but did not become acutely ill until a month later when he developed chest pain, severe polyarthritis and high fever. He was treated at home with aspirin and benzathine penicillin for 10 days before his hospital admission. Four days before his death, he was brought to the emergency room with fulminating carditis, including pericarditis, mitral and aortic valvulitis, myocarditis and cardiac failure. Blood pressure was 120/0. In spite of intensive care, oxygen, steroids and digitalis therapy, the aortic insufficiency progressed rapidly leading to death with pulmonary edema. At necropsy, acute valvulitis involving all four heart valves was found with necrosis and rupture of one cusp of the aortic valve. The lungs had the typical hyaline appearance of rheumatic pneumonia. Bacterial endocarditis could not be confirmed by blood cultures or petechiae either pre-or-post-mortem.

The second child was a 6-year-old, Negro female, from a socially, economically and medically deprived rural area. Symptoms of epistaxis for two months and dyspnea for two weeks before her admission had been ignored. In spite of massive doses of steroids, penicillin and decongestive therapy, she died within 36 hours after arrival in the hospital. The clinical diagnosis of severe myocarditis and mitral valvulitis due to rheumatic fever could not be confirmed, since no necropsy was obtained.

Discussion

Comparison of the 1948 and 1968 studies of patients seen at the Medical College of Virginia with acute rheumatic fever reveals many similarities and a few important differences. (Table III) The sexes are almost equally divided, but the racial distribution has changed from 63% white to approximately 63% Negro. The City of Richmond census in 1946 recorded 70% white and 30% Negro population. The 1967 census for the City of Richmond shows the Negro population has grown to about 49%. The striking economic deprivation of 92 of the 142 cases in the recent group is shown in Figure 4. Comparable data is not available from the earlier study, but little difference would be anticipated. When the average household contains 7 members, crowding is evident.

The incidence of rheumatic fever in the family has not statistically changed. The history of a preceding sore throat, 43% in the 1940's, increased to 51% recently, while the percentage of scarlet fever preceding the initial attack remained about the same. If scarlet fever, pneumonia and other recognized illness had all been ideally treated, about two-thirds of initial cases of rheumatic fever might have been prevented. The age of the patient now has a mean of 10.3 years; in 1947, it was 7.9 years. The peak season continues in the winter; December and January being the prime months in Virginia similar to England. Other observers have found a peak incidence in early spring.

In tabulating the major manifestations,

carditis was initially observed in 60% of the present group and 59% of the earlier group. The trend is to less severe residual heart disease. In the study 20 years earlier of the 49% (103 patients) who had residual heart disease, 53 were in category III and 50 in category II. The recent study has 56% in the milder category, II, and only 44% in category III. Figure 5 demonstrates the recent downward trend of heart disease especially in those with more serious types during their hospital stay and at the follow-up visit. Polyarthritis was manifest in 1967 in 54%; it was clearly defined in only 43% in 1947, but a much larger group had arthralgia without overt swelling. Chorea is less frequent now. The other manifestations are similar.

A higher percentage of cardiac failure and pericarditis in the 1965-1968 group may indicate better detection, but the 16 deaths in 1940-1947 (7.1%) compared to the two recent deaths (1.4%) show that mortality is better, but severe disease occurred at both times. The average duration of hospital stay, which was recorded in the 1940's as 6.4 months, was recently only 2.5 months. This suggests improvement in therapeutic measures making possible earlier discharge and a shorter acute course.

Confirmation of Beta hemolytic streptococci by antistreptolysin titres or cultures was achieved in 138 of the 142 recent cases. This data was not tabulated in the earlier series and very few of the patients had such confirmation. At the time of hospital discharge, 100% of our patients were on prophylactic therapy. The earlier group began

TABLE III

Comparison of Rheumatic Fever Cases in Virginia

	1940-1947	1965-1968
Total Cases	225	142
Source	OPD and Hospital	Hospital only
Percent Active	87%	100%
Sex:		
Male	48.5%	46.5%
Female	51.5%	53.5%
Race:		
Negro	37%	62.7%
White	63%	37.3%
Positive Family History	17.3%	13.4%
Average Age Onset	7.9 Years	10.3 Years
Peak Season	January	December
Preceding Sore Throat	43% (98)	51% (73)
Manifestations:		
Polyarthritis	43% (98)	64% (91)
Chorea	15% (34)	8.3% (11)
Erythema Multiforme	8.4% (19)	4% (5)
Nodules	2.2% (5)	4% (6)
Abdominal Pain	13% (31)	13% (19)
Arthralgia	47% (107)	10% (14)
Carditis:		
On Admission	59% (132)	60% (85)
Residual Cardiac Damage	49%	41.5%
Category II	49% (50)	56% (33)
Category III	51% (53)	44% (26)
Complications:		
Cardiac Failure	2% (5)	6.3% (9)
Pneumonia, Rheumatic	3% (7)	5% (7)
Strep Confirmed	ASO and Cultures Not Listed	138 by ASO or Culture
Length Hospital Stay:		
Average Duration	6.4 Months	76 Days
Recurrences	61% (136)	1.3% (2)
Percent on Prophylaxis	None until 1947	100%
Died	7.1% (16)	1.4% (2)
Average Follow-Up	5.95 Years	27 Months

to receive this therapy in 1947. It is not surprising, therefore, that 61% of the 225 children had recurrences in the era before prophylactic drugs were used. They were frequently multiple, and with increasing damage. Fifty-five patients experienced three or more attacks. The most striking difference is the 1.3% recurrences in the observed period of follow-up of 27 months on the children seen between January 1, 1965, and January 1, 1968. The two children with recurrences both failed to take their prophylactic drugs faithfully. The duration of follow-up was 5.95 years in 1947. Forty-nine percent showed residual cardiac damage. At the time of the most recent evaluation in the 1967 group, residual cardiac damage was found in 41.5%.

Conclusion

Acute rheumatic fever continues to occur in Virginia, although the recurrences and deaths have significantly decreased during the past 20 years. Information is presented on 142 children admitted to the Medical College of Virginia Hospitals during the three year period, January 1, 1965, to January 1, 1968, showing the pattern of disease recently recorded. A comparison is made with a similar group of 225 children investigated in the early 1940's before adequate streptococcal laboratories were available for identification and penicillin, steroid therapy and comprehensive management were possible. Computerized registration of acute rheumatic fever patients referred to all Crippled Children's Bureau Clinics in the State of Virginia began July 1, 1969 and hopefully will provide more comprehensive data from all the State clinics in the future.

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William Osler

The Man and the Influence of the History of Medicine on His Career

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The interest in the history of medicine that this great man of American medicine passed on to his students is handed down as an inspiration to us today.

OCCASIONALLY in the history of human events a man appears who, by a combination of circumstances, hereditary and environmental, has a "strong soul tempered with fire, not like a man of the crowd, but fervent, heroic, and good," [1] a true leader and a friend of mankind. We pay homage to such a man—William Osler.

His success as one of the great medical educators of our time lay not in his original contributions to science, for the few that he made could scarcely be compared with the contributions of Lister, Jenner, Sherrington, or Curie. Nor does his fame rest in being a lecturer who could inspire the spirit with ringing oratory, as did the great William Pepper. Far from the frontiers of great discovery, Osler's contribution lay in the exemplary, simple, and productive life which he led and the profound influence this had on scores of students during his active career of teaching. "The team makes the coach", it is often said, but in this case the coach made the team and the team has carried his teaching throughout the world. Osler influenced and inspired people with a genuine humility, good humor and equanimity, but what set him apart from his fellow physicians in the clinics and in the lecture room was a singular sympathy, love, and intimate understanding of the problems and responsibilities of his young students. Scores of letters from these men written after Osler's death testify that there has been no one like him in American medicine who could influence and inspire young people in so many ways. In the words of Robert Whittington about Sir Thomas More, Osler was truly "a man for all seasons".[2]

As a medical student at McGill University, the author came under Osler's spell attending just such a meeting as we are having here tonight. The student's interest in Osler began as pure hero worship. With time, as he read and learned more about the man and his philosophy, and began to see the wisdom of his writings, which were not required reading, the student gradually realized that Osler had done for him, years after his death, what he had done for so many during his lifetime, viz, stimulated an interest in a broader view of medicine.

Wherein lay the secret of his power? What was the nature of the man? What was his background? He was born July 12, 1849, the eighth child of Ellen Pickton and the

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Reverend Feathstone Lake Osler, at Bond Head in Upper Canada on the edge of the wilderness. Since the Rev. Osler was a pioneer clergyman who had chosen an isolated parish, food, heat, and shelter were the result of the family's daily labors and the home situation was ideal for the physical and moral development of a young man. Willie was raised in a loving, religious, and moderately disciplined household in which the children played a considerable part in the family welfare. The major concern of the parents was the education of the children, for which no expense was spared. From an early age, Willie showed himself a bright, industrious lad whom his father thought the most likely to follow him into the clergy. Unfortunately, the boy had a penchant for deviltry and mischievousness that, although his father didn't think so, undoubtedly disqualified him in his own mind. His father's library of 1,500 volumes consisted mostly of works of a religious nature. His uncle Edward, who also had come to Canada, was an accomplished naturalist and local literary figure who wrote poetry and hymns, as well as scientific articles on his biologic studies. Willie was proud of his uncle and one can imagine that Edward Osler introduced the boy, indirectly, to the thrill of the world of biology.

There is not much record of his early schooling until he attended a school at Dundas, Ontario, where his greatest interest seemed to be in leading his classmates in elaborate stunts or tricks. After one too many, however, he was expelled. Apparently Osler and three others were able to unfasten all the floor bolts and move all the desks from the classroom to an inaccessible attic space. When the teacher found out who the pranksters were he expelled the lot. When Willie came home that day, he told his devoted sister, "Chattie, I've got the sack." The following fall he attended a boarding school in Barrie, Ontario, the Barrie Grammar School, where he made friends with a number of boys with whom he was to attend medical school and keep in touch with until he died. The reputation of Barrie being on the wane, Osler's father, after one year, sent him to Weston, Ontario, to the Trinity College School, founded by a good friend who was Warden. Willie entered the Trinity College School at age 16 and embarked with some seriousness on his higher education. He continued his active involvement in school pranks but made an excellent school record, was caned often, and even jailed for two days on one occasion.

The school was conducted in a highily disciplined manner much as Eton or Rugby, and the students, in the British tradition, were required by the headmaster to wear top hats. The real difference between Trinity and the previous schools was not the discipline, but that here there was a true master who could inspire boys to learn. The Rev. William Johnson who taught Osler and recognized his potential, played an important role in shaping his future, for it was he who first aroused a scientific interest in the boy. The Rev. Johnson was an avid, dedicated naturalist, interested in collecting all types of biological specimens and classifying them with the aid of his microscope. He possessed the ability to inspire students to think for themselves, and took Osler as an assistant on weekend searches of the nearby woods and lakes. Johnson had a friend, James Bovell, who taught histology at the University of Toronto Medical School and who was also an avid naturalist. Bovell, the school physician, often came to Weston for weekends to accompany Johnson on his searches.

Osler had an aptitude for research and soon became a competent biologic assistant to Rev. Johnson and James Bovell. Their influence, happily, was related not only to biology but also to religion, and for years after he left Trinity, they acted as friendly advisors wherever he was. Osler was a bright, industrious lad who never missed an occasion to learn something new.

Osler's earliest exposure to medical history came from Father Johnson who loved the writings and philosophy of Sir Thomas Browne and frequently read passages from his writings to his students. The boy was deeply influenced by the writings of Browne, so much so that his second book purchase a few years later was the *Religio Medici,* which was to be his lifetime bedside companion. Little did he realize that this early influence, of one of the great literary physicians of all time, was going to be the tinder for a flame fanned into existence 30 years later at Johns Hopkins, a flame which burns there today. Little did he know, either, that his first copy of the *Religio Medici* was to be the nidus of a definitive collection of Browne's works, which was accumulated many years later.

At Trinity College School, another phase of his great career began—that of the enthusiastic and regular correspondent. Fortunately, some of his letters to friends were saved and at least one set, which encompasses a lifetime correspondence, has been published. In this marvelous collection of letters to Ned Milburn, an old friend at Barrie, we can see the humorous side of Osler, which influenced so many students and associates during his career. In a letter to Ned on July, 1865 (Osler was 16), he says:

> I am ashamed to write to you as I ought to have written last week, but you know what an awful bother is writing to boys. I heard from the wild Irishman this week, and he says Barrie is so damned lonely now "that he will go clear up out of the land." He says Maggie and Nelly and their unmentionables are all right . . . The governor is not going to send me back to Barrie and is considering sending me to Trinity College School outside Toronto.[3]

In another letter to Ned Milburn written October 17, 1865, he wrote:

> It is a shame that I have not written you before, but I have been waiting for that Irishman for the last three weeks . . . We have had good times with George Stuart. We went out sailing every evening in Mr. Brailes boat. He has got a six inch keel on her and two sails and she goes like the devil. Every time we go out, we go to Meeking's and have two or three good horns in Meeking's parlor and Mr. Stuart gets at the piano and sings the dirtiest songs out of jail.[4]

After Trinity College School, Osler went to Trinity College in Toronto for one year before he enrolled in Medical School at the University of Toronto. During his three year stay in Toronto, he worked constantly in his spare time with James Bovell and his biology collection. It was during this time that he learned the fine points of microscopy and tissue preparation. Bovell also had a large library which he made available to Osler. Although understated here, the inspiration of Bovell must have been great because Cushing, in reading Olser's student notebooks of this period, frequently found the name James Bovell, M.D., written in the margins. After graduation from the University of Toronto, and on the advice of Bovell, he decided to continue his education at McGill University in Montreal. In 1870, at the age of 21, he enrolled at McGill with two friends from Toronto, and they roomed together at St. Urban Street. Osler, as usual, was full of mischief and so amused his friends that one boy, Henry Wright, who was a roommate, years later used to laugh at the mere mention of his name. Osler, who always took on extra work, would dissect or look at microscope slides until late at night and would come home when the others were asleep. He would then proceed to rouse them with shouting and knocks until they got up to silence him and chase him into his room where he would bar the door and laugh irrepressibly.

On the heads side of the Osler coin, we see that Willie, wherever he went, gravitated

toward men of letters who had active avocations outside the practice of medicine. At Weston and Trinity College, he had been influenced profoundly by Johnson and Bovell. At McGill he encountered another man, Robert Palmer Howard, M.D., Professor of Medicine, who was to have an even greater and more direct influence on his later career than did Father Johnson and James Bovell.

To understand more clearly the academic physician of Osler's time, the reader must realize that to acquire an education in the mid 1800's in Canada required a considerable effort, and success depended a great deal on self-discipline and self-sacrifice. Many men who worked diligently as students and who later qualified for an academic career were completely devoted to medicine and their patients. Such men often never married (Howard did later), but sublimated their drives by strict self-discipline, self-sacrifice, and devotion to a cause. Robert Palmer Howard was such a man, and in his unswerving devotion to and absorbing interest in medicine and teaching, he was an inspiration to many young students including Osler. Often late at night the teacher and student would collaborate in writing up cases for the Canadian Medical and Surgical Journal. If Virchow or Rokitansky didn't help, then it would be found in the *Transactions of the Pathological Society* or in the works of other masters. Howard's secret was that he never gave up being an enthusiastic student and this lesson Osler was never to forget.

The author believes that in Palmer Howard's fine library, Osler had his second subtle exposure to the history of medicine. The influence was subtle. The books were being used as working references, but I think that the real seed of interest was planted by Howard's reverence for the masters during these sessions searching the medical literature. This seed, planted in the fecund soil already prepared by Sir Thomas Browne's *Religio Medici,* as we shall see, was to germinate, grow slowly, and bear fruit during the Hopkins and Oxford years.

After graduation from McGill in 1872, Osler went to Europe for two years of postgraduate study in the specialties as was the custom of many Canadian and American medical graduates. For 15 months he worked in a physiology laboratory at University Hospital, London, where he learned advanced histologic techniques and studied histologic aspects of peripheral blood. It is of interest to recall that originally at University College there was a professor of Anatomy as well as a professor of Anatomy and Physiology. The physiologists pressed for separation, and when this was accomplished, the microscope went with physiology, leaving anatomy only the cadaver.[5] Osler, therefore, despite his association with a physiological unit, actually devoted his time to histologic studies because this was a major area of research in the department.

During his stay in London, we learn from his letters, that he travelled to Norwich to see the remains—skull, and some bones—of Sir Thomas Browne, which had been accidently uncovered some years before by workmen digging under a church where he was buried. He was apparently very impressed by the church and the remains of Browne, because he wrote a detailed account to his sister "Chattie" and to Father Johnson.

After receiving his MRCP, Osler went to Berlin and Vienna to study a few months under Virchow and Rokitansky, Europe's great pathologists. On returning to Dundas, Ontario, he had a short stint of practice but soon was offered by Palmer Howard the position of lecturer on the *Institutes* of *Medicine* at McGill.

At the threshold of his career, Osler had had exceptional educational opportunities both at home and at school. At home he had learned his Bible well, so well that fellow students at Barrie, Trinity, and Medical School often commented on it. In school, he had an excellent classical education in the

old tradition of the British public school, and graduated from Trinity at Weston with a scholarship. Of equal, if not greater importance to his career in medicine and his interest in basic science and medical history, were the influences of Father Johnson, the clergyman-biologist, James Bovell, the physician-biologist-clergyman, and Robert Palmer Howard, the devoted Professor of Medicine at McGill. Each was such an inspiration to Osler that many of his lifetime habits and philosophical writings can be traced directly to their influence. The final phase of his student days was spent in London and on the continent learning research techniques and pathology.

McGill University Faculty of Medicine

While at McGill (1874-1884), as the "baby Professor", Osler devoted his time almost entirely to teaching, investigation, and writing and not to private practice as was the custom with most of the staff. He devoted a great deal of time to post-mortem examinations at the Montreal General Hospital and frequently reported his findings in the Canadian and American medical literature. He devoted so much time to the examination of autopsy material that he was eventually appointed Pathologist to the Montreal General Hospital, a position created for him in recognition of his outstanding work. He admitted later that he obtained a full appreciation of pathology during the Montreal years and that it was this background that made him a successful clinician. Although the concept of full time medical teachers at this time had hardly been conceived, Osler as well as I can determine, was as close to full time as was possible under the circumstances. His example and extraordinary popularity as a teacher no doubt had a lasting influence on medical schools. Years later many of them turned to full time medical teaching staffs.

Osler lectured in Physiology, Histology, and Pathology, did most of the autopsies at the Montreal General, and taught on the medical wards. This full schedule exposed him to many students, and since his approach to medicine was through basic science, in which he was more interested than straight practice, he soon became one of the popular men on the staff. His letters from this period reveal a growing interest in medical history, but since these years were devoted almost entirely to the study of the basic mechanism of disease, his literary interests were necessarily just beginning to develop.

Philadelphia Period (1884-1889)

In 1884, Osler, whose reputation had spread through his many publications, was invited to take the Chair in Clinical Medicine at the University of Pennsylvania, and because he believed the offer of a single position was more appealing than his continued triple responsibilities at McGill, he accepted.

To understand the true nature and influence of Osler, one must appreciate conditions at the University of Pennsylvania Hospital before and after his appointment. Attention is drawn to this phase in his career because at no other time did he exemplify to a greater degree the effectiveness of his humble, simple, and unpretentious way of life. The University of Pennsylvania medical school, the first in the country, had a conservative teaching tradition, grounded in formal, didactic lecturing and proudly claimed John Morgan, Benjamin Rush, Alfred Stillé, and William Pepper among its greats. Before Osler, however, research at the Pennsylvania Hospital was unknown, and the formal didactic lecture was the sole means of teaching. Medical students were not taught bedside medicine on the wards, but only by demonstration and in the clinics. After two years, students were assumed to be qualified to practice medicine.

Although nepotism was the tradition for senior appointments at Pennsylvania, Weir Mitchell, and S. D. Gross pushed for Osler, realizing that his research orientation would

bring new ideas as well as research, both of which were essential for the progress of medical education at the University Hospital.

When he assumed his duties at Pennsylvania, Osler came to work in a street car and never in a coach. He usually entered by the back door, not the main entrance, made friends with all the cleaners and workmen, and usually *sat* on the lecture table, dangling his legs rather than stand behind it. He refused, as he had at McGill, to become involved in private practice which his professorship would have permitted. His lectures were unimpressive only in that they were given in a halting voice that did not "ring from the rafters", as did William Pepper's. The substance was there but it is not difficult to understand the disappointment of the students and staff by his informality and rejection of the privileges that came with his professorship.

Since there was no research space available at Pennsylvania Hospital, he requisitioned a cloak room under the amphitheatre and set up his own microscope and pathology collection brought from McGill and there proceeded to carry out some clinical tests. He broadened the concept of the inductive method in medicine and demanded always the facts of the ward, of the microscope, of the laboratory, and of the autopsy room. He introduced bedside teaching on the wards and the principle of follow-up, even to the autopsy room when patients died. These revolutionary ideas met initially with considerable resistance from the older staff.

Before anyone knew it, however, Osler, in his own way and with no apparent effort, had fit into the traditional way of life at the Pennsylvania Hospital and gradually introduced new methods of teaching and clinical investigation that his elders soon began to appreciate. The students, too, who were very skeptical of this unimpressive, dark-complexioned Canadian, soon realized the tremendous value of his way of teaching and began to troop to his laboratory in numbers.

The Philadelphia years were busy ones. Besides his numerous contribution to the literature, Osler began to reveal an interest in medical history and a remarkable gift for letters. His interest in biography appeared in the form of a number of obituaries and sketches of famous medical men of the time. There is little doubt that the historical surroundings at the University, his position on the Hospital library committee, and the great library of the College of Physicians had a stimulating effect. We know from the letters written about him at the time that he had a love for the masters of medicine. In the words of James Wilson about the Pennsylvania period, "He inspired the students with enthusiasm for letters and taught them the great reward that comes fom searching the medical scriptures." [6] Similar statements can be found in other letters and reminiscences about the Philadelphia period, but the references are vague and give us no clue to his special interests. Despite lack of details, it is clear that his historical orientation had already been made use of in his writings and on the wards of Pennsylvania Hospital and that the influence of Sir Thomas Browne and Palmer Howard's library were coming to the surface. Osler so valued good libraries that as a parting gesture on leaving Philadelphia in the spring of 1889 nearly 1,000 volumes, mostly journals, of his personal collection were distributed to local libraries.

Johns Hopkins

In 1889 the faculty of the newly founded Johns Hopkins School of Medicine was being selected and at the suggestion of John Shaw Billings, a member of the John Hopkins Board, Osler was chosen for the Chair in Clinical Medicine. His reputation as a clinical teacher and investigator by this time had spread widely and he had just reached his fortieth year. Osler, who had met no small opposition at Pennsylvania, welcomed the

opportunity to finally put into practice his broad ideas of ward teaching and resident training. Being one of the four main service chiefs, all of whom were young (Welch, 39, in pathology, Halsted, 37, in surgery, Kelly, 31, in Obs-Gyn, and himself, 40, in medicine), he felt that the institution had great promise because of new ideas and the lack of binding tradition. His assumption was correct, because Hopkins with its four young professors, all innovators in teaching and research, was to be catapulted into the dominant place in American medicine in a few short years.

Osler began at Hopkins exactly where he left off in Philadelphia, and in his usual manner, taught his students by humble example and precept. So unpretentious and informal were his teaching sessions in the ward or lecture room, that the staff and residents actually wondered if he had not been overrated at Philadelphia. William Thayer in his reminiscences recalled these doubts about Osler. To his residents he presented again the enigmatic picture of simplicity that is disarming. Just as in Philadelphia, however, Osler, without trying, soon became the "potent ferment' of the school and the most popular man on the faculty. A student recalls a typical clinic with the Chief:

> His was the power of encouraging and inspiring, of firing in the youthful heart an enthusiasm for a chosen work. The scenes enacted with his students in the outpatient department are fondly recalled. There he stood, surrounded by his boys, lending them friendly advice in some puzzling case. With his arms thrown about their shoulders, through friendly inquiry, marked with humorous interspersions he guided them . . . Exact always, but never dogmatic, he could not but be always loved, always revered.[7]

During his time as Professor and Chairman of Clinical Medicine at Johns Hopkins (1889-1905), Osler reached the peak of his career and influence, and it was here that he firmly established his interest in the history of medicine.

There is little doubt that this interest stemmed from his teachers in Canada and the influence of Sir Thomas Browne and Robert Palmer Howard's library. While at McGill and Pennsylvania he began to collect books by and about the great masters and began to see the teaching value of an historical perspective. Furthermore, the University of Pennsylvania, and Philadelphia itself, provided a background of historical tradition that undoubtedly had an effect on his perspective. These influences crystallized finally at Johns Hopkins where Osler found enthusiasm for medical history in Billings and Welch and had the personal resources to afford extensive book collecting and the establishment of a library. His collection was broad and contained not only examples of the greatest treasures in medical history such as Harvey's *De Moto Cordis,* but also early works in American medicine and in general literature. In writing he was particularly interested in biography and in the early years at Hopkins, wrote about Rudolph Virchow, Oliver Wendell Holmes, Thomas Dover, and John Keats. Later he wrote the more delightful biographies of William Pepper, Elisha Bartlett, John Locke, William Beaumont and others. These, plus others written while Requis Professor of Medicine at Oxford University were collected and published (in 1908) under the title *An Alabama Student and Other Biographical Essays.* A study of these sketches reveals that Osler was not interested in popularizing the men about whom he wrote, but in revealing their sometimes unheralded contributions to medicine and their exemplary striving to succeed against hardships. The whole series shows the extraordinary breadth of the author's reading and literary style. They are so beautifully written that they received the following notice from Henry Sigerist:

> (They) are exquisite works of art, which bring to life the great physicians of the past, and have contributed more to the understanding of the evolution of medicine than many works by learned specialist.[8]

Karl Sudhoff, one of the world's great medical historians, remarked that "An Essay of Osler's is worth many ponderous tomes of dry erudition." [9]

There are few better examples of Osler's gift for letters and historical perspective than his biographic sketches. For example, the opening paragraph of Michael Servitus (1909):

> The year 1553 saw Europe full of tragedies, and to the earnest student of the Bible, it must have seemed as if the day had come for the opening of the seal spoken of in the Book of Revelation, when peace should be taken from the earth and men should kill one another. One of these tragedies has a mournful interest this year (1909), the four hundredth anniversary of the birth of its chief actor; yet it was but one of thousands of similar cases with which the history of the 16th century is stained. On October 27, shortly after twelve o'clock, a procession started from the town hall of Geneva—the chief magistrates of the city, the clergy in their robes, the lieutenant criminal and other officers on horseback, a guard of mounted archers, the citizens with a motly crowd of followers, and in their midst, with arms bound, in shabby, dirty clothes, walked a man of middle age, whose intellectual face bore the marks of long suffering. . . Bound to the stake by the iron chain, with a chaplet of straw and green twigs covered with sulphur on his head, with his long dark face, it is said that he looked like the Christ in whose name he was bound. Around his waist were tied a large bundle of manuscript and a thick octavo printed book. The torch was applied, and as the flames spread to the straw and sulphur and flashed in his eyes, there was a piercing cry that struck terror into the hearts of the bystanders. The faggots were green, the burning was slow, and it was long before in a last agony he cried again, "Jesu thou Son of the eternal God, have mercy upon me!" Thus died, in his forty-fifth year, Michael Servetus Villanovanus, physician, physiologist and heretic. Strange is it not that had he cried, "Jesu, thou Eternal Son of God", even at the last moment, the chains would have been unwound, the chaplet removed, and the faggots scattered; but he remained faithful unto death to what he believed was the truth as revealed in the Bible.[10]

Throughout all his life, Osler was a student of the lives of those who had gone before. Biography was to him of compelling interest and in his numerous biographical essays, . . . he stimulated in his disciples a reverence for the great names of medicine, and an interest sometimes as deep as his own, in the search for the recondite in the history of our art.

Osler believed that biography was the best teacher of medical history, because the student learned not only about the man, but the times. In his essay "Harvey and his Discovery", he states his theory of medical history.

> History is simply the biography of the mind of man; and our interest in history, and its educational value to us, is directly proportionate to the completeness of our study of the individuals through whom this mind is manifested. To understand clearly our position in any science today, we must go back to its beginnings and trace its gradual development, following certain laws, difficult to interpret and often obscured in the brilliancy of achievements—laws which everywhere illustrate this biography, this human endeavor, working through long ages; and particularly in this case with that history of the organized experience of the race which we call science.[11]

Osler's ends were not merely writing biographies or collecting books. He had a genuine love for the people about whom he wrote and whose books he collected. So sincere was his love of biography as a means of studying medical history that it pervaded all aspects of his life. William Sidney Thayer in his "Reminiscences of Osler" described his personal experiences with Osler's teaching and striking historical knowledge.

> He was not one who loved to roll under his tongue some meaningless name in connection with a symptom, but he used to refer us to the original description of many pathological processes or methods of clinical investigation with which we were concerned, in such a manner as to excite an interest in the man and his work. In later years, at the 12:00 clinics, he frequently asked the student whom he had called up in connection with the examination of the case to report a week later, in a brief five-minute talk, on the history of some symptoms or clinical phenomenon, referring him to the original book or article. In this way he taught his class far more about the history of medicine than they would have learned from a dry, systematic course of lectures.[12]

Since William Welch and Osler found a common interest in "stoking the coals of medical history", and since both were book collectors, they needed no more than a suggestion from John Shaw Billings to establish a hospital historical club at Johns Hopkins. It was established in 1889 and met thereafter on a regular monthly basis. The purpose of this society, now the oldest medical society in this country, was to stimulate and encourage an interest in medical history among the students and staff. Osler didn't miss a meeting of this group for 15 years unless ill or out of town. It was his custom to set tasks for his students, and they would report the results of their research at subsequent meetings. William Thayer reminisces about his own introduction to the masters while a post-graduate at Johns Hopkins:

> My first real acquaintance with Laennec and Bichat I owe to just such tasks as set me by the chief. Interest once awakened was generously rewarded. My little paper on Laennec brought me, as gifts from the chief, the first four editions of the works of this master.[13]

Osler, whose knowledge of old books, of printing, of paper, of binding, and of history was extensive, would frequently illustrate the talks with books from his own growing library. If a student was assigned the topic of Vesalius, Osler might bring to the meeting original copies of the *Tabulae Sex* (1936), one of the first atlases of anatomy printed for students, and of the *De Fabrica Corporis Humani* (1543). In an evening, the students, in an informal atmosphere around a large table, would learn an important segment of medical history and have the memorable opportunity to actually see original works. It is little wonder that the flame of interest was kindled under many of Osler's students and that these men went away with a far greater medical education than was available to them in the medical curriculum or on the wards.

In addition to the Historical Club, Osler introduced the history of medicine to many students at informal gatherings at his own home. One of his students recalls these meetings:

> Every Saturday evening the group doing their ward work in medicine gathered at his house. Assembling about the dining table, they discussed the interesting cases on the wards, over beer and sandwiches, while the Chief talked informally of medicine, of men, of books, of history. His talks were often illustrated by the demonstration of treasures from the library that developed into the great collection which surrounds his ashes at Montreal.[14]

Osler in 1905 accepted the Regius Chair

in Medicine at Oxford which required fewer formal commitments and offered leisure and opportunity. This appealed to him and he devoted more and more time to medical history, his library and literary interests. By this time, his personal library of thousands of books was famous and the focus of many a gathering in his home. His broad interest in medical history led him to attempt a systematic history of medicine which was published in 1907 as a survey entitled "The Evolution of Internal Medicine" in Vol. I of Osler's and McCrae's 7 volume *System of Medicine*.[15] In 1913 he was invited to give the Sillman Lectures at Yale and chose the opportunity to write a more comprehensive history of medicine to be given as a series of lectures called "The Evolution of Modern Medicine." This superb "airplane flight through the history of medicine" displays a phenomenal depth of learning in history, literature, and medicine that is found in no other history of medicine. The series was published in 1921[16] and is recommended as the most readable introduction to medical history available.

It is to Osler that the History of Medicine Section of the Royal Society of Medicine owes its existence. The foundation of such a body had been discussed by other men, but without Osler's enthusiasm and driving force the project would have remained a dream. He was elected its first president at the opening meeting in November 1912 and in his modest acceptance speech claimed only two qualifications for the office: interest and academic leisure.

To what end did the history of medicine serve Osler? The obvious, direct and practical value was to provide an understanding of the previous efforts of medical scientists, efforts to which present contributions were to be added. Without a knowledge of the history of an idea and of what has been done before, few new ideas develop.

Of more indirect value, medical history has been said, "To furnish the stimulus of high ideals which we poor weak mortals need to have before us." [17] This belief Osler often stated in his writings but never as effectively as in his address, "The Master Word in Medicine" delivered at Toronto in 1903.

> Professional work of any sort tends to narrow the mind, to limit the point of view and to put a hallmark on a man of an unmistakable type. On the one hand are the intense, ardent, natures absorbed in their studies and quickly losing interest in everything but their professions, while other faculties and interests "fust" unused. On the other hand are the bovine brethren, who think of nothing but the tread mill and the corn. From very different causes, the one from concentration, the other from apathy, both are apt to neglect those outside studies that widen the sympathies and help a man to get the best there is out of life.[18]

Later in the same address he spoke of the "inner education" gained from such studies:

> Uncongenial surroundings, an ever-present dissonance between aspirations within and the actualities without, the oppressive discords of human society, the bitter tragedies of life, the *lacrymae rerum*, beside the hidden springs of which we sit in sad despair—all these tend to foster in some natures a cynicism quite foreign to our vocation, and to which this inner education offers the best antidote.[19]

Another important benefit from the historical perspective, often mentioned by Osler in his essays, is best seen in the words of Thomas Bogg of Johns Hopkins:

> Moreover, it was not merely the cultural value of a knowledge of the beginnings of the procession, but the constant lesson of the individual worker's triumph over handicaps of isolation, poverty, ridicule or personal peril, to add some contribution to the sum of knowledge, and the reiteration of the theory that the painstaking and observant physician, even thought re-

moved from centers of learning and wide opportunity, has in the past contributed fundamentally to the advancement of knowledge, and may hope to do so in the future.[20]

Osler, therefore, believed that historical study in medicine had great practical, spiritual, and moral value for students who were interested enough to dig in the archives after regular hours. It is of interest to note that invaluable contributions to our understanding of medical history and many acknowledged, scholarly works such as those of Osler and Cushing have been written by men involved full time in clinical teaching or research.

What was Osler's influence on the study of the history of medicine in the United States? It is fair to say that with the exception of Robley Dunglison, John Shaw Billings, and William Welch, no one did more to stimulate an interest in medical history than Osler. Henry Sigerist relates that:

> The Johns Hopkins Medical History Club, or rather the Johns Hopkins Hospital Historical Club, as it was named at the time of the foundation, met regularly from 1890 to 1905 . . . Eugene Cordell of the University of Maryland did not exaggerate when he made the statement that the Club had "exercised a profound influence not only locally, but throughout the entire country. Many able papers have been read before it, and there are few who have any claims of distinction in this field in the United States who have not been its guests." This was true and we find the medical historical activities of the entire country reflected in some way or other in the papers read before the club, many of which were published in the *Bulletin of the Johns Hopkins Hospital*.[21]

Osler died December 29, 1919, and the medical world mourned its loss. His inspiration and influence in medical history, however, live on. In his will he donated 7,600 bound volumes of medical historical interest to McGill University for the establishment of the first medical history collection in Canada. Lady Osler, while she lived, supported the work to complete his last great unfinished effort, "The Bibliotheca Osleriana", the catalogue of his library. This magnificent work, begun by Osler and completed by W. W. Francis, R. H. Hill and Archibald Malloch, will always be recognized as one of the great bibliographies of medical history. Of Osler's historical contributions there is no doubt that this will live the longest.

Thus, the torches Osler lit at McGill, Pennsylvania, Hopkins, and Oxford have been happily carried into many distant parts, each lighting other torches until like sacred flames, they never die, but multiply.

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Profile of the American Wife

By March 1968, there were over 46.6 million married women in the United States. This represented an increase of almost 3.9 million since the 1960 Census. Over a third are under 35 years of age and more than a fifth are at ages 35-44. On the other hand, only one in 12 is 65 years or older.

About 93 percent of married women live with their husband in their own household. An additional 1.4 percent reside with their spouse in the home of a parent or other relative till they are able to set up a household of their own. Of the wives who live apart from their husband, three fifths do so because of marital discord. For another quarter either the wife or her spouse is an inmate of an institution, or is employed away from home. In the remaining cases the husband is in the Armed Forces.

American wives have attained a relatively high educational level: three fifth have at least a high school education. Among women under age 35 living with their spouse, over 70 percent are at least high school graduates and about a fifth have had one to three years of high school. On the other hand, of those now aged 65 and over—who reflect educational levels of the past—less than a third have completed high school and more than half have less than one year of high school.

Husbands are still the main breadwinners in most families. Over the years, however, increasing numbers of wives have been employed; by March 1968 they constituted over one fifth of the total labor force at ages 18 and over. Wives work to supplement the family's income, to help buy homes, to pay for the children's college tuition, or to resume an interrupted career.

(*Statistical Bulletin, Metropolitan Life Insurance Company, January 1970*)

Vitamin B_{12} Deficiency

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Vitamin B_{12} has been found to be useful in the treatment of a variety of conditions, not of pernicious anemia alone.

BEFORE 1920, during my childhood, a friend of ours developed pernicious anemia. The diagnosis in those days was a death sentence and the dread it produced made an unforgettable impression. The picture is still clear, the patient's downhill course, the pale slightly yellowed skin, the weakness and breathlessness, terminating finally in paralysis and death. Thirty years later, after long continued study, the little red crystals, one form of vitamin B_{12}, were discovered and, after their injection began, the typical pernicious anemia patient disappeared from our hospitals and clinics. Today the medical student reads of the classical symptoms but rarely has the opportunity to see a full-blown case.

The successful treatment of pernicious anemia with injections of vitamin B_{12} was so dramatic that it has overshadowed the importance of B_{12} administration in other conditions where the deficiency is less severe and deadly. This paper is an attempt to emphasize the existence of these other conditions, too long undiagnosed and untreated.

The normal oral absorption[1] of vitamin B_{12} is intricate. The vitamin must first be combined with intrinsic factor produced in the stomach, and then, after traveling through the duodenum and the jejunum, is finally absorbed, in the presence of calcium, by the ileum. Disease, surgery, and other injury, anywhere along this route, may prevent absorption. When this involved mechanism breaks down it is still possible to achieve oral absorption, probably a simple diffusion, by giving very large amounts of vitamin B_{12} orally. Injection, however, is the most practical and economical method of administration when the normal oral absorption fails.

In tables I, II, and III, a number of conditions, excluding pernicious anemia, have been listed from the literature, in which the patient runs an increased risk of developing vitamin B_{12} deficiency. This list includes some rather rare conditions, but also numerous conditions to be found in any medical clinic.

TABLE I

CONDITIONS WITH INCREASED RISK OF VITAMIN B_{12} DEFICIENCY

Deficient intake of vitamin B_{12}:
- Dietary deficiency due to:
  - famine
  - poverty
  - anorexia
  - poor teeth or none
  - vegetarian and other dietary fads
  - alcoholism

TABLE II

CONDITIONS WITH INCREASED RISK OF VITAMIN B_{12} DEFICIENCY

Deficient absorption of vitamin B_{12}:
- close relatives of pernicious anemia patients
- gastrectomy and partial gastrectomy
- gastric carcinoma
- chronic gastritis
- gastric freezing
- diabetes
- hypothyroidism
- alcoholic gastritis
- diverticulosis of the small intestine
- fish tapeworm

From the McDonald Army Hospital, Fort Eustis.

blind loops of the small intestine
malabsorption syndrome } with folic acid deficiency
anticonvulsive therapy }
radiation therapy of abdominal and pelvic malignancy
ileitis
surgery of the ileum
diarrhea and enteritis
laxative habit

TABLE III

CONDITIONS WITH INCREASED RISK OF VITAMIN B_{12} DEFICIENCY

Increased requirement of vitamin B_{12}:
pregnancy
thyrotoxicosis
hemolytic anemia
hemorrhage
malignancy
loss by increased excretion { liver disease / renal disease

In addition to these listed, there are a number of conditions which benefit from vitamin B_{12} administration, although the mechanism causing deficiency is not understood, such as tobacco amblyopia, color blindness, and certain senile and other psychoses.

The following cases are from our outpatient clinic and were selected because they showed evidence of vitamin B_{12} deficiency in spite of normal, or near normal, hemoglobin levels. Our routine laboratory examinations did not demonstrate changes in the blood smears but it is possible these changes would have been found by a hematologist. The simplest screening test for vitamin B_{12} deficiency, but by no means a definitive test, is probably the vitamin B_{12} serum determination,[2] a bioassay, which has only become available in our clinic in the past six months. Our blood samples are sent away and we do not receive our report until two to four weeks later.

Report of Cases

Case #1. Mr. H. was a white male, age 75, complaining of progressive weakness and depression. He had had indigestion for many years, was very thin, and appeared older than he was. His laboratory work was negative except for a hemoglobin of 12 gms., slightly below normal for males. The blood smear was reported as normal. His weakness progressed rapidly and he became bedridden because "his legs just wouldn't hold him up." He was hospitalized and had various tests, including an upper G.I. series, all pronounced negative. A neurologist saw the patient and put him on large doses of vitamin B_{12} IM. He soon regained the use of his legs, was no longer depressed, and seemed much better. Two years later, still on B_{12} injections, he died of cancer of the stomach. He was, however, neither bedridden nor depressed, until a few days before death.

(B_{12} serum level determinations were not available at this time.)

Case #2. Mrs. W., a white woman, age 39, came to the OPC complaining that for the past year she had been "always angry". She had become very unsociable, couldn't sleep at night, and tired so easily that she had to stop her housework frequently to rest. She had three children, normal periods, and no history of illness except for neuritis in her right arm. Her father had diabetes. Her laboratory work was normal, with a hemoglobin of 13.4 gms. She was given vitamin B_{12} injections, 1000 mcgms. once a week. Twenty-four days later she was much better. She was cheerful, had "more energy", and was more inclined to be friendly. She stated "I feel like a human being again." About this time the report of the B_{12} serum level, taken at the onset, was reported as "below 100 milli-milli-micrograms" (normal 200 to 900).

Case #3. Sgt. J. came in complaining that his legs got tired too easily and "gave out" when he walked any distance. He had been a borderline diabetic for a number of years with an abnormal glucose tolerance curve but was able to control his blood sugar with a careful diet. His laboratory work was normal, with a hemoglobin of 14 gms. He was put on vitamin B_{12} injections and two weeks later appeared in such good

health that he was sent to Viet Nam as a helicopter mechanic. After he had left, his serum B_{12} level was reported as "below 100 milli-milli-micrograms" and we are now trying to reach him to arrange for a Schilling test.

Case #4. September, 1966, Mrs. P., a white woman, age 45, four children, normal periods, came in complaining of pain in her left flank and upper thigh, worse with bending, present for over a year. She also complained of weakness, disinterest, and fatigue for several years. Her hemoglobin was 13.4 gms., other laboratory work was normal. X-rays showed narrowing of L5-S1, a diagnosis was made of mild degenerative arthritis, and she was treated with flexion exercises, with only slight improvement. She was then given a series of vitmain B_{12} injections on an empirical basis. (No B_{12} serum levels were available at that time.) In January, 1967, the patient returned to request more vitamin B_{12} injections as she was "really feeling better". After receiving four at weekly intervals, she was not seen until October of 1967 when she returned. She stated her pain was decreasing and that right after finishing the injections she had felt like her "old self" again. (She sounded like a Geritol commercial!) She was given another series of four injections and then was not seen until July, 1968, when she came in saying her pains were all gone but she was again feeling "run down" and needed more vitamin B_{12} shots, which she received. She returned in March, 1969, and complained that she was beginning to feel light-headed, tired, and shaky. (By this time B_{12} serum level determinations were available.) She lives 60 miles from the clinic and had had no vitamin B_{12} injections for seven months. Her hemoglobin was 13.2 gms. and the B_{12} serum level was 170 (normal 200 to 900). She received another series of vitamin B_{12} injections and reported in June that she was "feeling good, going hard, and enjoying it."

The literature is full of references to such conditions as "subclinical", or "incipient", pernicious anemia. These cases apparently exist in numbers far greater than the cases of clinical pernicious anemia. This is the "iceberg" phenomenon referred to by Witts.[3] Nervous and mental symptoms may precede the development of true anemia and are of particular importance since the symptoms are usually reversible when treated promptly. Victor Herbert states, "Pernicious anemia develops slowly from a state of complete normality to a state of severe vitamin B_{12} deprivation." Is it logical to wait until these patients have reached the stage of severe deprivation before initiating diagnosis and treatment?

Perhaps we will find that vitamin B_{12} deficiency is much more common than we realize, and that some of our patients who are suffering from depression, neuritis, irritability, and weakness, will show low B_{12} serum levels. In order to find these patients, we shall need to make more laboratory tests, but especially, we shall need to develop a higher index of suspicion.

Summary

There are numerous conditions, other than pernicious anemia, in which there is risk of vitamin B_{12} deficiency, and a list of these, from the literature, is presented. Several cases are described and the importance of vitamin B_{12} serum levels in the detection of deficiency is noted.

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He Held On and On and On

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Multiple intestinal perforations resulted from blast injury but these and two episodes of peritonitis were survived.

"If you can force your heart and nerve and sinew
To serve their turn long after they are gone,
If you can hold on when there is nothing in you
Except the will which says to you, hold on!"

ABOARD A SHIP OF THE NAVY in which I once served, there was an officer addicted to strong drink. A common inquiry by this character when he came across the doctor upon a "morning after" one of his "big nights" ashore was: "Doctor, how bad can a man feel and still live?" I never knew the answer. Neither have I known how bad one could look and still live. Many doctors have stood between the morgue door and patients whose eyes were fixed on "a pale horse: and his name that sat on him was Death."

The following case report and pictures are offered as an example of a man who went a long way into the valley of the shadows and came back.

Strange and devious are some of the ways and means by which bodily harm may be sustained, but, in a broad sense, most of the casualties resulting from combat with an organized enemy in time of war fall into fairly well defined categories consisting of wounds from gunfire, burns, fractures, lacerations, contusions, dislocation of joints, the deleterious effects of prolonged submersion in water, exposure to extremes of temperature, to radioactivity, and to noxious gases. None of these forms of physical injury are necessarily peculiar to armed conflict. They all are encountered among the civilian population.

There is one type of trauma, however, which belongs in a separate and distinct class, not especially because of any peculiarity with respect to the nature of the injury sustained, but rather because of the extraordinary mechanics responsible for the infliction of such a bodily insult. Reference is made to blast injury.

Fundamentally there are two kinds of blast injury—air and water.

During World War I, injury from air blast was a well recognized possibility, and how many individuals suffered from this type of violence, either by reason of physical damage or shock to the nervous system, will never be known. There were probably a great many, and during World War II, air blast casualties were not uncommon in areas subjected to heavy bombardment from the air.

In any event, injury from water blast attracted no more than passing attention except possibly on the part of a highly specialized few) until the outbreak of World War II. During that war a quite appreciable number of water blast casualties occurring either singly or in small or large groups—dependent upon the attendant circumstances—were met and dealt with.

No attempt will be made here to enter into a scientific discourse upon the differential characteristics of the cause and effect of air and water blast except to say that air blast is more prone to cause injury when the individual is near the explosion, in a closed space and when the explosion is of a sharp, sudden or totally instantaneous nature. The parts of the body most vulnerable to this

type of violence are the lungs and eardrums.

In water blast, on the other hand, the most damaging type of explosion is not the snappy, instantaneous variety, such as is produced by fulminate of mercury, but a relatively more gradual detonation, such as is produced by TNT. The blast waves emanating from this latter kind of explosive are transmitted more effectively through water and for a longer distance. In either blast category—whether air or water—the element of brisance comes to the fore. This is the physical principle responsible for the phenomenon of the remote ball on a billiard table moving away when the near ball is struck while the cue ball and the near ball remain stationary at the point of impact. The part of the body or system most vulnerable to water blast is the abdomen and abdominal viscera. The nature of the damage done is usually in the form of perforation or rupture of the bowel at one or more places.

The case in point was a victim of water blast injury, and he qualifies for special citation upon a number of counts. First, he escaped being killed by an occurrence that has spelled finis to many people. Suffice it to say that while in search of enemy submarines in the vicinity of Tarawa Island, he crashed in an airplane. As a Gunner's Mate, U. S. Navy, he was performing the role of bombardier. When the plane crashed into the water this man was thrown clear. He was stunned but not seriously hurt until the bombs being carried aboard his plane for the purpose of bombing Japanese submarines exploded and blew him out of the water. Upon resumption of his floating state, his abdomen at first felt numb, but soon violent abdominal pain ensued. After being picked up by a U. S. destroyer he was transferred to his aircraft carrier. Thence he was borne to the U. S. Naval Hospital at Pearl Harbor. Upon arrival there, according to his health record, he presented the classical manifestations of general peritonitis. This was confirmed by laparotomy and a rupture was discovered in his cecum (count number 2). The cecal rupture was closed and, in the light of the virtual certainty that an adynamic ileus would supervene, an ileostomy was established.

It was almost three months after his original injury before the patient reached the U. S. Naval Hospital, San Diego, California. Upon admission there he presented the depleted, emaciated appearance shown in figure 1.



Fig. 1

Shortly after his admission to the San Diego Naval Hospital, preparation for closure of the spouting ileostomy came to be considered. Preliminary to restoration of continuity of the intestinal tract a retrograde roentgenological study of the large bowel was made to insure its intactness, and particularly the competency of the closure of the ruptured cecum. The roentgenologist reported no evidence of departure from normal in the large bowel; therefore, the ileostomy was closed.

Now comes count number 3: Shortly after the closure of the ileostomy, abdominal pain developed and rapidly increased in intensity attended by cessation of peristaltic sounds and by distention and splinting. Thus the specter of peritonitis again reared its hideous head. The abdomen was forthrightly reopened and a generalized peritonitis was indeed found to be rampant. Further investigation revealed two perforations in the iliac portion of the patient's sigmoid colon. Why these leaks had not been evident in the preoperative x-ray study was not readily explainable. It was assumed that, in the functionless descending colon, they had, after a fashion, become covered over by plastic exudate. In any event, a considerable segment of fouled up ileum was resected and a side-to-side small bowel anastamosis was done, two perforations in the iliac sigmoid were closed and a double-barreled colostomy in the transverse colon was established.

During the ensuing several weeks the patient reached a state of debility from the like of which recovery is seldom seen.

This was in a day when penicillin had only recently been added to the physician's armamentarium, and its supply was restricted almost entirely to use of the Medical Departments of the Armed Services. This antibiotic is given its share of credit for its role in this man's survival. However, aside from the part played by penicillin and aside from his phenomenal vitality, he had another powerful ally going for him, and that was the fact of his already having weathered a severe peritonitis incident to his original injury. All large bowel surgeons know that the existence of no more of a stimulus than a colostomy will induce a fair degree of vaccination against peritonitis, and recovery from a major intraabdominal infection will render the individual amazingly tolerant of subsequent peritonitis.

With an imperturbability such as he would have exercised in dropping a bomb on a Japanese submarine "he trumped death's ace". He forced his "heart and nerve and sinew to serve their turn long after they were gone."



Fig. 2

Upon approach to complete recovery, following closure of his double barreled colostomy, and therefore a final establishment of the continuity of his intestinal tract this man sought to return to active duty, but it was thought he had, in a full measure, contributed to the war effort. Anyway, similar to the bee that collided with the windshield on an automobile moving at a seventy mile per hour rate, he declared "he would do it again, if he had the guts."

Surveyed to civilian life, he returned to his place of origin in Iowa, entered upon the career of a schoolteacher—for which he was planning when the war interrupted his plans—married a childhood sweetheart who had visited him when the tide of his life was at its lowest ebb in the San Diego Naval Hospital, raised a family of three children and, in relatively recent years, became a high school principal in his home town where today he does "justly, loves kindness and walks humbly with his God." (Fig. 2)

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Foreign Body Granuloma of Synovium Following Intra-Articular Injection

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Doubly refractile crystalline material was discovered in the synovium of a 50-year-old man who had received multiple intra-articular injections in the past. The material resembled phosphate and x-ray diffraction studies identified it as calcium pyrophosphate. Chondrocalcinosis (pseudogout) is probably involved in this situation.

INJECTABLE MEDICATIONS should leave no residue at the site of injection. This is particularly true when the joint space is the site. The purpose of this report is to briefly describe a foreign body granuloma due to birefringent crystalline material in the synovium of a knee joint which had been injected over a long period of time with steroid derivatives. Attention is called to this occurrence.

Case Report

Mr. E. J., a 50-year-old white male, was admitted to the hospital because of severe symptoms referable to his knees. For twenty years he had had pain, gradual loss of range of motion, locking and weakness. These symptoms had grown much worse in the last few months and were equal in severity bilaterally. For many years he had been treated with intra-articular injections of steroid in addition to the usual supportive therapy. Physical examination revealed severe osteoarthritis of both knees with pal-

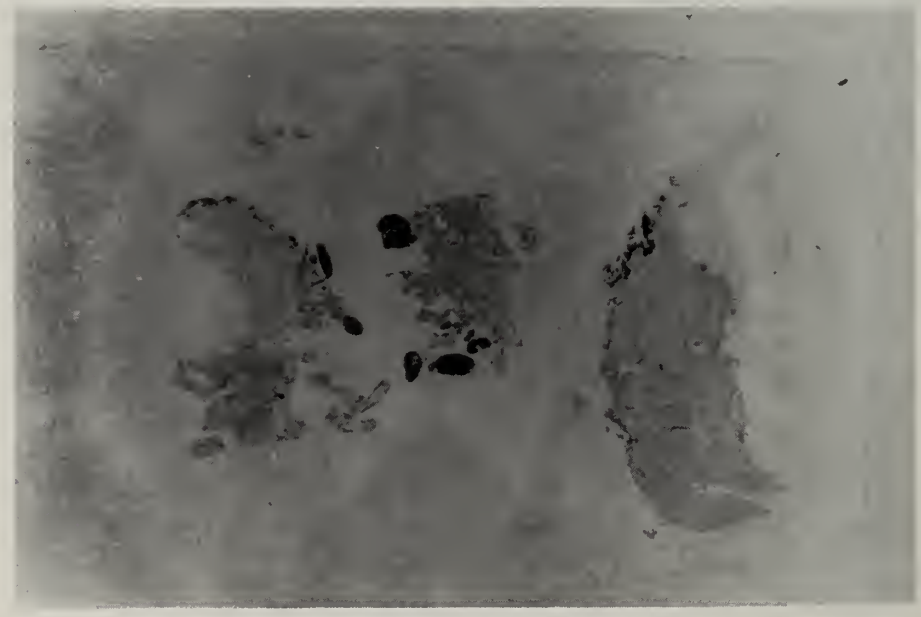


Fig. 1. Synovium (H & E Stain—Low Power)



Fig. 2. Synovium (H & E Stain—40 X)



Fig. 3. Synovium (H & E Stain—40 X Polarized Light)

pable loose bodies and marked crepitus. The other joints were minimally affected. X-ray study of the knee joint revealed severe bilateral osteoarthritis with narrowing of the joint spaces, bony spurring and evidence of joint mice. Evidence of chondrocalcinosis was found. Admission hemogram, urinalysis and VDRL were within normal limits.

On the second hospital day, arthrotomy of the right knee was performed with removal of loose bodies, osteophytes, and portions of synovia. Histologic examination revealed changes consistent with osteoarthritis and chronic synovitis.

On the eighth hospital day, arthrotomy of the left knee was performed with removal of similar material. The synovium contained papillary excrecences (Figs. 1 & 2) containing a foreign body granuloma with many doubly-refractile crystalline bodies which resembled phosphate crystals (Figs. 3 & 4). Moderate fibroblastic proliferation

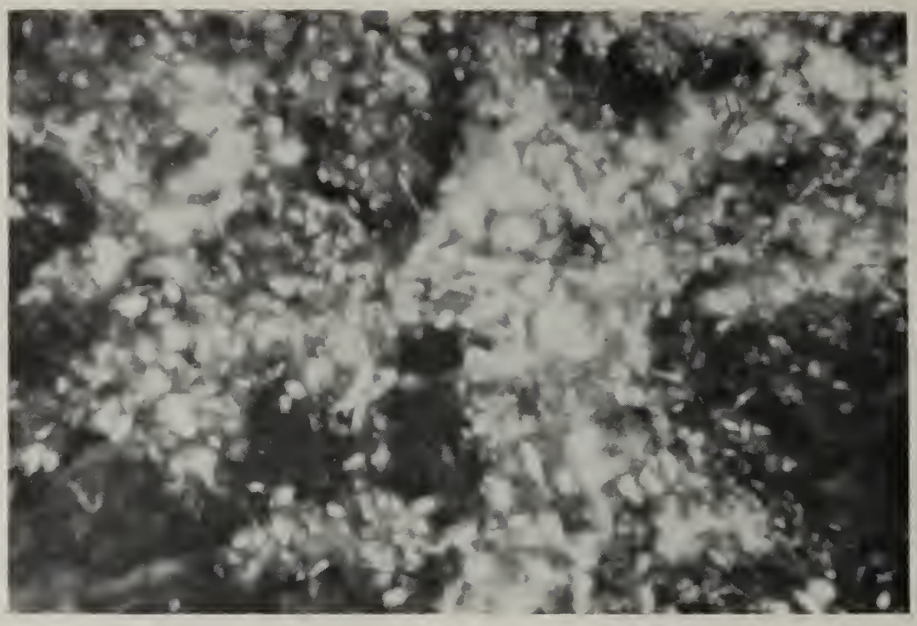


Fig. 4. Synovium (H & E Stain—100 X Polarized Light)

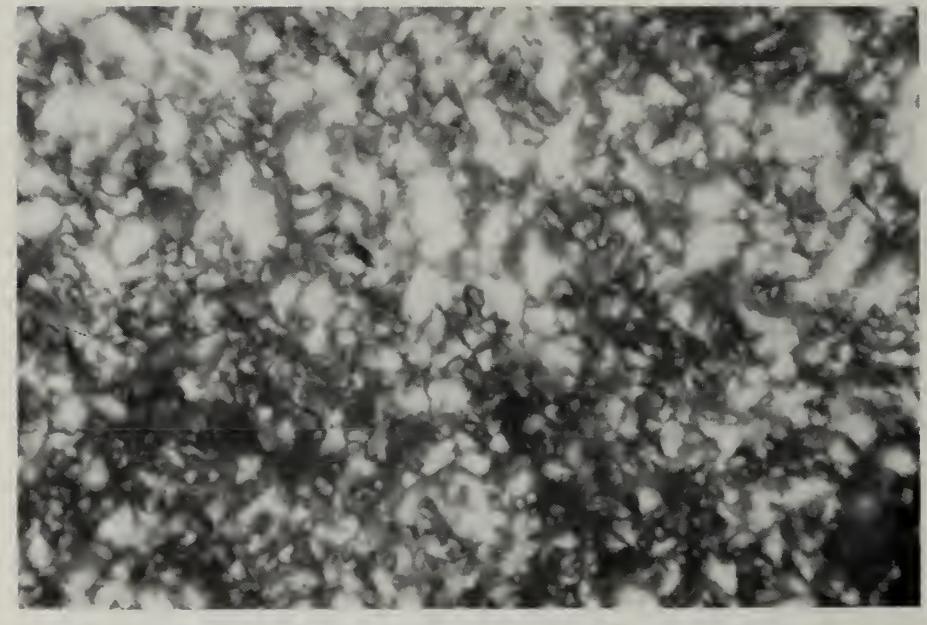


Fig. 5. Hydrocortisone Phosphate Crystals (100 X Polarized Light)

was noted about some of the deposits. The crystals were identified as calcium pyrophosphate.*

Following surgery, the patient did very well with early ambulation and physical therapy. He developed a slight wound infection in the left knee but this healed without difficulty and he was discharged on the 50th hospital day. Follow-up revealed excellent results from his surgery.

Past history revealed that this man had received many injections in his knee joints over the years from many different physicians in several states. An exact detailed analysis of these is impossible, but derivatives of cortisone are thought to be the only medications injected. Most injectable steroid compounds use acetate or phosphate as the

* The author is indebted to Frank B. Johnson, M.D., Chief, Histochemistry Branch, Armed Forces Institute of Pathology, Washington, D. C., for the identification of these crystals by x-ray diffraction studies.

base and it appeared most likely that phosphate was the doubly-refractile material. A solution of Hydrocortisone Phosphate was studied under polarized light (Fig. 5). The similarity of the crystals is obvious. The syndrome of "Pseudogout" in which calcium pyrophosphate is present in the joint fluid and the articular cartilages must be thought of in a situation such as this.[1,2,3,4] The obvious foreign body reaction, the history of injection and the absence of similar changes in the other knee make pseudogout less likely, but admittedly impossible to exclude. The x-ray findings definitely show evidence of chondrocalcinosis and it is possible that two basic conditions are present, a foreign body granuloma and pseudogout.

Summary

Doubly refractile crystalline material was discovered in the synovium of a 50-year-old man who had received multiple intra-articular injections in the past. The material resembled phosphate and x-ray diffraction studies identified it as calcium pyrophosphate.

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AMA and AVMA Issue Joint Statement on Pollution

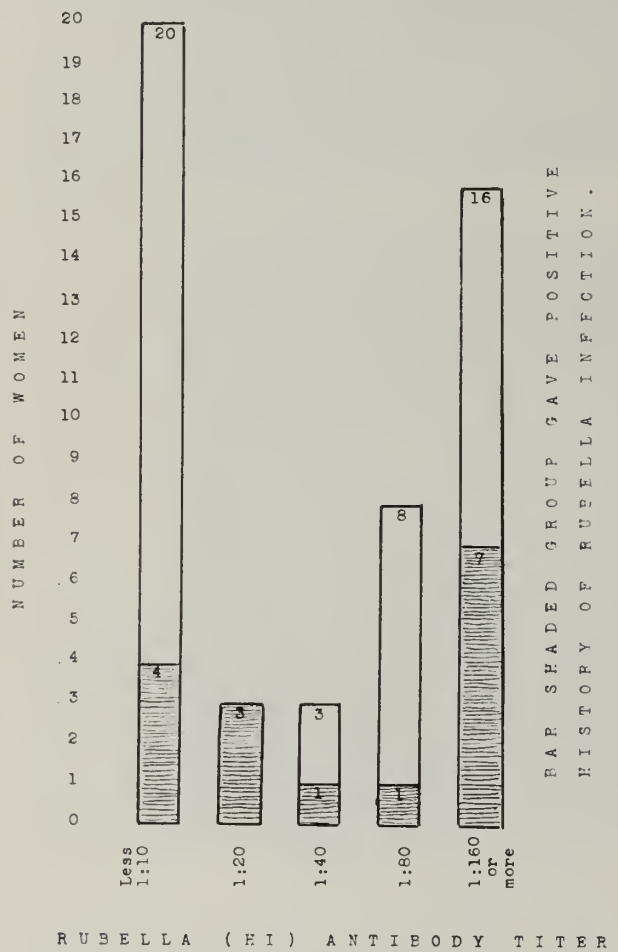
The AMA Council on Rural Health joined with the Council on Public Health of the American Veterinary Medical Association to issue a joint statement entitled "Concern with Pollution". It called for increased participation at all levels of society in programs to control this growing environmental hazard. The statement read, in part: "Air, water, and soil pollution produce health hazards and implications to mankind, the extent of which though not currently documented, appears to be of significant proportions. Second to our concern for the human race is the threat to the ecology of animal and plant life. . . . We are convinced that with adequate research we can allow our technology to work for us without the pollution by-products. We ask that this research be urgently supported by all levels of society with necessary funds and manpower; that high priority be assigned at national, state and local levels to logical solutions for the problems of pollution of our air, soil, and water."

The statement asks that organizations alert and involve their component organizations in these concerns and exert influence at federal levels to promote effective and sound programs for research and controls.

The Hemagglutination Test (HI) in a Group of College Women

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THE PURPOSE of this report is to give the results of the hemagglutination test



(HI)[1,2] for rubella antibody in a volunteer group of college women.[3] A total of 50 women were tested and 30 women or 60% had some HI rubella antibody titer. The findings are presented in the bar graph. An inquiry as to whether the women had German measles was made and the shaded portion of the graph shows the number with a positive history of German measles. None of these had been immunized by the live vaccine.

The Virginia State Health Department has begun a Statewide effort to eliminate rubella in Virginia by a program of vaccination among school children. An outbreak of rubella in 1970-1971 is expected.[4] It is of note that 40% of the group of college women tested had no detectible HI antibody for rubella and thus could be considered as susceptible to rubella infection.

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From King's Daughters' Hospital

Mental Health....

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Communication Problems Between the Adolescent and the Doctor

In trying to take a look at some potential problems in communicating with adolescents, we need to look at several areas, not the least of which is ourselves. This is not to imply that one wants to add another voice, many years past thirty, to the pack of adult voices who proclaim our inadequacies and shortcomings and who shout that we are no good, have failed, and should turn matters over to the clear-visioned, clear thinking youth of our time. Such voices no doubt have much sincerity and partial truth, but too often one suspects some of the more vocal pronouncements reflect a last-ditch attempt to identify with youth in an effort to sustain their own failing vigor with the advance of years.

There is a progression of personality growth and development of man from cradle to grave. We move from one stage to the next, with many overlaps in these stages. Some of the tasks that we must accomplish come easy and others are difficult. All along the continuum we deal with the developmental sequences with varying degrees of success. Most of us are left with solid strengths in certain areas and relative weaknesses and vulnerabilities in other areas.

Adolescence is a long period of time, with many hurdles. It is a time when so many of the tasks that were begun in early life have to be brought to a fairly high degree of resolution if we are to move on into adulthood with a relatively good chance of successfully assuming the privileges and responsibilities of grown-ups.

It is a difficult period, filled with anxieties and doubts, as well as joys and expectations. If one chooses to dwell on the morbid aspect only, he wonders how anyone ever traverses this ill-defined belt between childhood and adulthood.

However difficult and filled with pitfalls, most of us seem to make it through and emerge as fairly intact adults with the capacity for working, for finding a mate to love and begetting our own soon-to-be adolescents.

If we make it, and are not locked up in jail or in a mental institution, we may, in fact, consider ourselves somewhat well-versed in the tricky art of growing up, whether we be physicians or poultry farmers. But with our becoming young adults we move into another phase of life that is all-consuming of time, thought and action, as we try to find our way in the market place of living-making in a competitive world.

We are grateful to be there, but the pace is such that there is not much time or inclination to think about the adolescence that is behind us. We got through it and somehow it soon begins to look, through the distance of years, like an impressionistic painting: we recognize that it is there and what it is, but the details are not very clear. Certain details we can remember, though they are subject to the distortion of the lens of time—things like the winning touchdowns, a long-awaited date with a particular girl, our first payday when we worked at the corner market, etc.—things which made us feel good, enhanced our self-esteem, and which one by one added to our ego storehouse and helped us to feel good about

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being an individual, about being John Jones, Bill Hix, Mary Brown, or whoever.

There are many things about adolescence that we do not remember, or remember imperfectly. Some things float in like ghosts in the darkened recesses on the stage of the conscious mind, often right in the middle of some performance that we are enjoying. We try to banish these intruders back into the wings as quickly as possible. In other words, in our own time of adolescence, there were many ideas and experiences that made us feel uneasy, unworthy, afraid, anxious, guilty. We did the natural thing: we repressed totally or partially those matters which are most threatening and which made us most uncomfortable. This psychological reflex of repression, and the many other psychological mechanisms of defense, are as automatic as a child's withdrawal of his finger from a hot stove. They serve the same purpose—one to protect from further physical harm and the other to protect the growing personality from a level of anxiety that can be extremely uncomfortable and even disorganizing of function.

Now, there is no way to get from here to there—from childhood to adolescence without going through it, without the joys and anxieties. It is how character develops and how individuals are made. But it may well be that lurking anxieties from our own adolescence need no longer be so threatening, if we just knew it. But they are there to an extent in all of us, and one suspects that the spasmodic, jerky, erratic, shifting, arrogant, sure yet unsure behavior of adolescent youth touches the hidden hurts within us from our own past. We don't like to be reminded; it is too painful. Rather than run the risk, we often have to protect ourselves by denouncing the current crop of youth. While our own adolescence looks like an impressionistic painting to us, the current behavior of youth sometimes reminds us of a surrealistic nightmare.

They say we don't understand, and partly they are right. But I believe that we understand more than we are given credit for understanding. Further, if we could somehow find out that our own adolescent ghosts need not be so alarming, we could be of greater help in providing guidance to the current generation.

Next, let us consider the major tasks that confront all adolescents and ways in which they try to solve them, along with some of the hang-ups.

Perception of Parents

Once the growth spurt starts, with its accompanying changes, physical and emotional, the young adolescent is rapidly catapulted into this dilemma. From infancy when he was totally helpless and had to depend on nurturing figures for everything, he developed a view of parents as being all-knowing and all-powerful. He needed them and they responded. His view of them has already changed somewhat as he moved from being a lap-baby, to a knee-baby to a yard-baby and out into the neighborhood. He has gradually gained some independence and some sense of himself as an individual. As he moves into early adolescence his whole being has undergone a fairly sudden change —new thoughts, new emotions, new ways of perceiving himself and his world. But he is still more child than man and his earlier views of his parents are still paramount. Even with the most optimal relationships with parents as a solid background, he will writhe, moan and protest his parents decisions, whatever they are. If he truly has terrible parents who have been neglectful, rejecting and even cruel, this may be a really stormy time. He may want parents with a different set of values and approaches and much of his protest (verbal and action) may say this, but he may have to settle by changing his views to the realization that he cannot do much about his parents. The past he cannot change, but he can change himself and modify his own attitudes. The real danger at this time is that parents do not know the struggle that the adolescent

is going through and view his every negative statement and attitude as malignant. Often the youths anger, irrational though it be, is met with irrational adult anger that drives the two generations further apart. This separation from parents is the goal of the adolescent's rise and fall of emotions, but if accomplished with continuing bilateral hostility and rejection it leaves its scars. During this time something needs to remain fairly stable, and it must be the parents because the adolescent is not stable and cannot be so until he gradually finds his identity as an individual moving toward adulthood. His vascillation, within minutes or the hour, should be our cue, and if we recognize that this is a time-limited proposition it makes the wear and tear easier. Many parents do not know or recognize this and make matters worse. Guidance from the physician in getting this across to parents is just as important as sitting with the adolescent and helping him to understand that parents are not, in effect, all good or all bad, that in fact they are like other people. Eventually the adolescent will have to come to this view of his parents, but this can come only after much practice.

Sexual Identity

The adolescent is moving toward the ultimate selection of a marriage partner, but before this can be successful he must consolidate his sexual identity as biologically determined. This would appear to be an easy task since it is genetically determined, but a great deal of practice is necessary, apparently, in learning to be a boy or girl. This starts quite early as they observe father and mother and their behavior. Here is where many distorted views of man and woman begins. The punitive and cruel parent of either sex, the seductive parent who has such an unsatisfactory relationship with the marriage partner that he or she leans on a young child of four or five for the missing emotional gratification, the home in which one parent is missing with no suitable substitute after which the young child can model himself or herself. There are many adverse combinations.

Even if the young child goes through the family triangle period satisfactorily, these relationships are activated again with the onset of puberty and early adolescence. Part of the protest about parental relationships has to do with his sexual feelings. Parents often feed into this difficult period by extreme attitudes of affection and rejection. Especially in broken homes is this a problem, and it is surprising how often a mother may have a pubescent boy sleeping in her room or even in her bed, or a father who has a highly seductive relationship with a pubescent daughter. These are unwholesome relationships and potentially crippling to the young adolescent.

On a milder note, most young adolescents are concerned with a multitude of questions and wonderings about their emerging sexuality. Will I be male enough, or female enough? What about penis size, or breast size? Much information is obtained from peers, but much of it is distorted. Some information is available from parents, but there are many questions they cannot ask parents. Such information is best obtained from a neutral source and the physician is in position to be of great help in clarification.

Soon the young adolescent is concerned about dating, his strong sexual feelings, masturbation, petting, intercourse and marriage. He may need someone to listen to his thoughts about many such matters. What a healthy situation it would be, one probably too rare, if the adolescent and his doctor had such a relationship that the youth could come to the doctor with such concerns. Many times he does come seeking help, but his ticket is a multiplicity of hypochondriacal complaints which mask fears and apprehensions. Such a relationship can exist and probably develop best out of a continuing pre-adolescent relationship with the doctor, a relationship in which the adolescent does not fear that every concern of his

will be revealed to curious parents watching and listening in the outer office for his secrets. However immature and inane his acts may be sometimes, he is searching for his identity. He deserves some dignity in this search, deserves to be taken seriously. It is reassuring and healing to him to find that most of his fears are universal and that he does belong to the human race. This kind of validation for a troubled youngster is of inestimable value to him. One day he may even smile or actually laugh at himself, a pretty good sign of maturation.

Code of Conduct

Conscience formation begins early in the child's life and at first is largely a reflection of the sanctions and disapprovals of the father and mother. Parents have their own codes of conduct and behavior, but the family is also the primary source for transmitting the taboos and sanctions of the culture. At first these are matters outside the child and he begins to comply out of the signals of approval or disapproval. Soon those "do's and don'ts" are made a part of his personality and he begins to be able to have some internal controls of his own. As he grows the formation of conscience or ethical concepts is contributed to by other sources—school, church, scouts, etc.

The process is still going on when he reaches adolescence. In fact a "shaking up" occurs here because he is in touch with a much wider circle of friends from different backgrounds and usually different parts of the country. Peers at this age are the people, his generation, with whom he must succeed. It is inevitable that there will be some "loosening" as well as "tightening" of the conscience during these years. He must emerge from adolescence with a fairly solid code of conduct for himself. As parents watch the evidences of conflict over right and wrong in their children, they are frequently alarmed that what they have tried to instill will be washed away by the incessant waves of change. The chances are, however, that although change will occur, the adolescent will emerge from his struggles not so markedly different from what the family taught in his formative years. This is a time when he will need to try out his ideas not only with peers, but with a more neutral observer than his immediate family.

A Life's Work

This can cause great consternation, with children being under pressure to commit themselves earlier and earlier. Adolescents tend to see everything so much in the present and time seems to them so short. It does seem unfortunate to have to be concerned about this to such an unusual degree; yet the pressure is there, at least to move in some general direction. Perhaps we could do better than we have in helping them to decide whether college should be the next goal, vocational training, or whatever. Maybe we could help some of them feel more comfortable with the choice that many circumstances direct them to take. Perhaps doctors who know a lot about feelings are in position to help the adolescent feel better about himself and his choice.

Throughout this discussion of the adolescent and his conditions several problem areas in communication have been mentioned indirectly. To be more specific:

1. Of prime importance is the capacity of the physician to be able to empathize with the adolescent. To do so he needs to be enough in touch with his own adolescent years to remember some of the pains as well as the pleasures. It helps for him to know many adolescents, not just as patients, but under other circumstances, such as church groups, athletic teams, scouting, boys' clubs etc. A good way of getting the flavor of their "inner life" is through reading fiction about them. Writers often are able to express insights into thinking and feeling in more meaningful ways than other people.

2. Maintain a friendly objectivity. You have to be yourself; the adolescent does not want his doctor, or any adult for that matter, to try to be an adolescent with him. That only confuses him further. He does want to feel that you understand how he feels. That in itself lessens his sense of isolation.

3. Be alert to his transference, realizing that he will have a strong tendency to react to you as he does his parents, especially if his parents sent him. This is likely to be filled with hostility (behind which is fear). If his anger elicits counter-anger, hostility and rejection from you he is not helped. It is only further proof to him that all adults are alike and don't understand. You may have to let him know that his anger won't harm you and that you are not his parent.

4. Try to form an alliance with him so that he will know that you will not feed back the detail of what he says to you to his parents. He knows that if there is some major problem that they will have to know, but he needs some reassurance on run-of-the mill matters which are not so ordinary to him.

5. Try to help his well-meaning parents to understand the meaning of his struggles, yet support them in major decisions of importance. Sometimes the adolescent has to be protected from his own impulses. Help keep them off his back every time he moves. It helps his needed sense of independence if he can make and keep his appointments by himself.

6. Don't be too quick to give his emotional state a name or label. This may frighten him. Adolescents have all the symptoms of psychiatric disorders yet many of them are transient and normal at that age. For instance, all adolescents have symptoms of depression and many depressive equivalents. We are depressed when we suffer loss, actual or imagined. The adolescent is losing his childhood and his dependency, at the same time that he is struggling and fighting for independence. It's enough to depress him. He somehow knows he can't have his cake and eat it too, but he doesn't like it that way.

7. Be honest with him and if you don't know an answer say so. But express your wish to help him find a satisfactory solution. This attitude indicates a respect for him, to which he will respond.

8. Listen far more than you talk. "Nobody listens to me" is often his chief complaint. If you listen with a nod or sound of encouragement, he will most likely find his own solution to the problems perplexing him. That way he has done the work and can take pride (which is a sense of being able to do) in his own accomplishment.

These are just some of the problem areas in communicating with our adolescent patients. You know others and have your own ways of surmounting them.

Throughout all of the struggles and gyrations of these young people, it is well to keep in mind that they are trying to find an identity—What am I, Who am I, Where am I going, and How will I get there?

His means of doing this are often ineffectual, time-consuming and wasteful. Our task is to lift him off the treadmill and start him down the road whenever we can. That can be pretty often, if we take time to try to know his nature.

Diagnostic Laboratory Medicine....

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A Review of the Basic Mechanisms of Fibrinogen to Fibrin Conversion and of Fibrinolysis: Intravascular Coagulation Versus Primary Fibrinolysis

Pathological disorders such as alcoholic cirrhosis, malignancy, renal disease and multiple myeloma may interfere with the normal blood clotting mechanism, producing either increased fibrinolytic activity or disseminated intravascular coagulation. More commonly, such clotting abnormalities are associated with gram-negative septicemia, abruptio placenta, septic abortion, and defibrination syndrome of the newborn. Current treatment consists of giving heparin, which prevents formation of a clot by acting as an antithromboplastin and antithrombin, or epsilon amino caproic acid (EACA), which inhibits the conversion of plasminogen to plasmin thus preventing fibrinolysis. In order that proper treatment be instituted as soon as possible, it is important to differentiate disseminated intravascular coagulation from primary fibrinolysis.

Many new *in vitro* tests for the diagnosis of these two clotting abnomalities have been reported. These are based on the characterization of various products formed when clotting or lysis takes place. An understanding of how these tests have been devised and how they are applied can be gained by reviewing the pertinent mechanisms of coagulation and fibrinolysis.

During the conversion of fibrinogen into an insoluble fibrin clot, a number of products are formed.[1,5,6] This is best illustrated in the following schematic diagram:

$$\text{fibrinogen} \xrightarrow{\text{thrombin}} \text{fibrin monomer} + 2 \text{ fibrinopeptide A} + 2 \text{ fibrinopeptide B} + \text{carbohydrate}$$

$$\text{fibrinase} \xrightarrow{\text{thrombin}} \text{activated fibrinase}$$

$$5\text{-}15 \text{ fibrin monomers} \longrightarrow \text{fibrin polymer}$$

$$\text{many fibrin polymers} \xrightarrow[\text{active fibrinase}]{Ca^{++}} \text{fibrin clot}$$

Thrombin initiates the clotting sequence shown above by splitting off the fibrinopeptides A from the fibrinogen molecules. The importance of this step is emphasized by Blombäck and Vestermack,[7,42] who have shown that the presence of fibrinopeptide A results in the formation of a fibrin clot even before fibrinopeptide B has been released from the fibrinogen molecule. Studies performed using bovine fibrinogen provide additional evidence for the relative importance of the release of fibrinopeptide A. Snake venom reptilase, an enzyme having clotting activity, releases fibrinopeptide A but not fibrinopeptide B from bovine fibrinogen. Even so, an insoluble clot is formed.

Shainoff and Page,[32,40,41] in their studies with rabbit plasma, observed the formation of an "intermediate fibrin clot" which they called cryoprofibrin. It had the properties of precipitating in the cold and being clottable by thrombin. Laskowski, Rakowitz, and Scheraga[8] may have observed the formation of cryoprofibrin using another method. They clotted samples of bovine fibrinogen at room temperature, incubated the supernatant serum at 37° C for 24

hours, and then cooled the supernate at 2° C for two hours. During this cooling period small clots formed in the specimens which could be dissolved by reincubating the samples at 37° C for 24 hours and then formed again by recooling to 2° C. The term "paracoagulation" has been applied to the formation of cryoprofibrin.[28]

One application of the phenomenon of paracoagulation is the precipitation of soluble fibrin monomer complexes (SFMC) from plasma by protamine sulfate.[28,33] There are two types of SFMC.[9] One, formed by the action of thrombin only on fibrinogen, is a combination of fibrin monomer with fibrinogen molecules. This complex is not only clottable with thrombin, but can also be precipitated from solution with protamine sulfate, beta-naphthol, platelet factor 4, or by cooling to 4° C. The other, fibrin monomer complexed with degradation products of fibrinogen or fibrin, is formed by the action of both thrombin and plasmin on fibrinogen. This complex cannot be clotted with thrombin but is precipitated out of solution by protamine sulfate.

The fibrin clot observed by Blombäck and Vestermack and Shainoff's cryoprofibrin may be the same entity. Von Felton, Frick, and Straub[28] have shown that the clot produced when reptilase is added to human fibrinogen is smaller than that produced by thrombin and results in a larger number of fibrin monomers in the supernatant serum.

The final stage of thrombus formation, the strengthening of the fibrin clot, has been attributed to an enzyme known as factor XIII or fibrin stabilizing factor, plasma transglutaminase, and Laki-Lorand factor.[44] According to Lorand,[7] factor XIII and thrombin together are able to form covalent crosslinks between the fibrin strands. Pisano, Finlayson, and Peyton[29] found that ammonia was produced during the cross-linking of the glutaminyl residue of the acceptor chain to the lysine group of the donor chain, and therefore proposed the term, transglutaminase, as an appropriate synonym for activated factor XIII.

In the normal individual, thrombus formation is followed almost immediately by the proteolytic action of plasmin, which attacks not only the fibrin clot but also fibrinogen molecules. According to Bang[6] and others the final breakdown products are small peptides and two larger peptides which have been called fraction D and fraction E. During the initial stages of fibrinolysis and fibrinogenolysis there may be several intermediate breakdown products formed.[15] These early degradation products may complex with each other or with fibrin monomer and, in addition to soluble fibrin monomer already complexed with fibrinogen, be precipitated out of solution by protamine sulfate.[16]

Using agar and acrylamide gel electrophoresis, Marder, Shulman, and Carroll[15] have been able to separate and characterize the products of proteolysis. The two early fragments, which they called X and Y, have many of the same characteristics of fibrinogen with regard to antigenicity and electrophoretic mobility. Fragment X has properties almost identical to fibrinogen except for a different mobility on agar and acrylamide gel electrophoresis. Fragment W is identical to fibrinogen electrophoretically on agar gel, but it can be separated from fibrinogen by eluting from Sephadex G-200 gel. Marder has found that plasmin digestion occurs in three stages, which can be characterized by the type of breakdown products formed during each. The following diagram shows which products are formed during the different stages of proteolysis:

$$\text{plasminogen} \xrightarrow{\text{activators}} \text{plasmin}$$

$$(1)\ \text{fibrin or fibrinogen} \xrightarrow{\text{plasmin}} \text{fragment X}$$

$$(2)\ \text{fragment X} \longrightarrow \text{fragment D} + \text{fragment Y}$$

(3) fragment Y ⟶ fragment D + fragment E + small peptides

Fragment X alone is found during the first stage. This molecule is then split into a large fragment D and a smaller fragment Y. The second stage is characterized by the presence of both X and Y fragments. Fragment Y is then split into another fragment D and a fragment E. The absence of both X and Y fragments marks the third stage. Fragments D and E, along with a few smaller peptides, are the final digestion products produced by plasmin and other fibrinolytic enzymes such as urokinase and streptokinase.[6,15]

The products formed during all stages of proteolytic digestion of fibrin and fibrinogen, X, Y, D, and E, contain antigenic determinants identical to those of fibrinogen.[15] However, the antigenicities of X and Y appear to be identical to each other and have been combined and referred to as the X-Y determinants. These are different from the antigenic sites found on D and E. Marder has concluded that the antigenic make-up of fibrinogen is determined by the D, E, and X-Y fragments. However, there is still another antigenic site found on the fibrinogen molecule which has not been identified with any of the breakdown products.

In primary fibrinolysis, plasmin is acting directly on the fibrinogen molecules; whereas, in secondary fibrinolysis, plasmin action is directed toward the fibrin clot. Therefore, clinically, it may be important to determine whether proteolytic breakdown of fibrin can be differentiated from proteolytic breakdown of fibrinogen. Fragments D and E formed from proteolysis of both fibrin and fibrinogen appear to be the same when studied by immunoelectrophoretic methods.[20,23,24,26] However, the fragment D of fibrinogen has been shown to be heat labile, whereas the fragment D from fibrin is heat stable. Furtherfore, after heating, fibrinogen degradation products do not cause a prolonged thrombin time. Fibrin degradation products cause an increased clotting time before and after heating. Bang[6] has shown that fragment D interferes with the polymerization of fibrin monomer accounting for the prolonged clotting time. Also, the resulting clot is physically and structurally abnormal.

Detection of the products formed during coagulation and fibrinolysis has been used as a basis for *in vitro* tests to determine whether or not a patient has a consumptive coagulopathy. The fibrinopeptides, A and B, formed by the action of thrombin on fibrinogen, are quickly digested by exopeptidases in the serum.[3] Nilsson has proposed that the fibrinopeptides or their degradation products may be found in plasma and very possibly in the urine after the clotting episode. This theory has not been followed through. Breen,[34,38] however, has been able to detect the fibrin monomer released during thrombus formation by allowing it to form a gel with 50% ethanol. By adding a small amount of 0.1 N NaOH to the test solution, nonspecific gels or precipitates of fibrinogen are not able to form. Godal[35] previously had done extensive work using ethanol gelation, though his technique was slightly different from Breen's. At the present time, this is the only laboratory test which has been used to specifically diagnose intravascular coagulation. The only report of false positives has been by Nalbandian,[36] who found positive gels in patients with hyperglobulinemia. It is probable that false negatives can be expected since the fibrin monomers are quickly removed from the circulation by the reticuloendothelial system.

There are several *in vitro* tests which are specific for the detection of fibrinogen and fibrin degradation products formed during primary and secondary fibrinolysis. Merskey, Kleiner, and Johnson[31] have done an excellent study of these methods which include: the precipitin test, "Fi" test, immunodiffusion, immunoelectrophoresis, and tanned red cell hemagglutination inhibition immunoassay (TRCHII). All of the above pro-

cedures are based on an antigen-antibody reaction between the breakdown products and rabbit anti-human fibrinogen antibody. Fragments D, E, X, and Y will react with the rabbit antisera; fibrin monomer and the fibrinopeptides A and B will not. Merkey concluded that the TRCHII was the most sensitive and reliable of the methods tested and the precipitin and "Fi" test the least sensitive.

Lipinski[33] has used the phenomenon of paracoagulation to devise a test which can be used to demonstrate consumptive coagulopathy. Since both fibrin monomer complexed with fibrinogen and monomer complexed with fibrinogen or fibrin degradation products will be precipitated by protamine sulfate, the type of specimen used is a nonspecific indication of whether the coagulopathy is due to primary fibrinolysis or intravascular coagulation with or without secondary fibrinolysis.

Niewiarowski[9] and Bachmann[39] have reviewed the tests available that are of value in differentiating primary fibrinolysis, intravascular coagulation, and intravascular coagulation with secondary fibrinolysis. The relationships between the results obtained in each disorder are shown in Table 1.

None of these laboratory tests is specific or sensitive enough to be used to give a definite diagnosis; but together with the patient's clinical picture, they can give a good indication of what the problem is and how it should be treated.

Summary

Disseminated intravascular coagulation and primary fibrinolysis are serious disturbances of the normal blood clotting mechanism which may complicate many nonhematologic disorders. Before treatment can be given, it important to determine which clotting abnormality is occurring.

Several tests are available in the clinical laboratory to aid in the diagnosis of fibrinolysis and intravascular coagulation. In order that the results of these tests can be better interpreted, the basic mechanisms of fibrinogen conversion to fibrin and fibrinolysis are reviewed.

Table I

Test	*Primary Fibrinolysis*	*Intravascular Coagulation*	*Intravascular Coagulation with Secondary Fibrinolysis*
platelet count	normal or slightly decreased	decreased	slightly decreased
plasminogen level	decreased	normal	slightly decreased
SFMC*—plasma	low	high	elevated
SFMC—serum	elevated	normal	high
FDP**—serum	high	normal	high
thrombin time	prolonged	normal or prolonged	prolonged
heparin thrombin time	prolonged	shortened	variable
ethanol gelation	negative	positive	positive
Factor V assay	slightly decreased	decreased	decreased
Factor VIII assay	slightly decreased	decreased	decreased
fibrinogen level	decreased	decreased	decreased
Euglobulin lysis time	markedly shortened	normal	shortened

*Soluble Fibrin Monomer Complexes
**Fibrin or Fibrinogen Degradation Products

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(*References continued on page* 319)

Miscellaneous....

Excerpts from the Monthly Surgery Committee Meeting, The Memorial Hospital, Danville

Case Number One: This patient is a 30-year-old Negro female who suffered a trimalleolar ankle fracture of the left leg. She was seen in the Emergency Room initially and placed in a long leg cast and advised to enter the hospital. The patient refused to enter the hospital because she had a number of children at home and other than the mother there was no one to provide for their care. She was, therefore, advised to return to the physician's office the following day so that the cast could be inspected. The cast was not split prior to her leaving the hospital. The patient failed to return to the physician's office until one week after the cast had been applied. She said that approximatly three days after the cast had been applied her foot became cold and blue and swollen and initially there was a certain amount of pain but the foot had eventually become insensitive. She was immediately admitted to the hospital after examination in the physician's office and the cast was removed. After admission to the hospital, she was taken to the Operating Room where a continuous epidural catheter was placed and Xylocaine anesthesia administered. A fasciotomy of the posterior compartment was undertaken at the same time. The patient was placed at bedrest with the leg elevated, and vascular surgical consultation was obtained. In spite of all efforts, the foot became gangrenous, and a B-K amputation was undertaken. At the time of surgery, it was noted that the veins of the lower extremity were completely filled with clotted blood which was adherent to the intima of vein.

Dr. J. M. Stoneburner: I saw this patient in consultation with Dr. Atkins. She had a history of a trimalleolar fracture of the left leg and application of a plaster cast approximately seven days previously. She had complained of a considerable amount of pain the day following application of the cast which was followed by complete numbness of that lower extremity. Examination revealed a cyanotic cold foot and ankle. There was no pulse palpable below the popliteal artery. There was no capillary filling of the nail beds. There was little motion of the foot and toes, and the leg and ankle were markedly swollen with tense fascia and skin. I advised that extensive fasciectomy be undertaken without closure of the skin. I also advised that the patient be anticoagulated in order to prevent further intravascular coagulation. I also felt that sympathetic block by means of an epidural catheter should be undertaken to stimulate vasodilatation and hyperbaric O_2 to the extremity might also be helpful. In spite of these efforts, the leg became gangrenous, and a B-K amputation was necessary.

Early recognition of extremity ischemia is mandatory if one is to prevent the irreversible changes. It should be emphasized that muscle degeneration and neuropathy may occur before there is complete loss of a peripheral pulse. In order to completely comprehend whether a serious complication of this nature is ensuing, the extremity should be carefully evaluated both for motor function and neurologic changes at the time of injury. In spite of the presence of a pedal pulse, ischemic changes in the lower extremity can progress and require extensive fasciectomy only a few hours after injury in order to prevent irreversible ischemic changes in the extremity. Often times, these legs will necessitate skin grafting in order to close the defect caused by the fasciectomy. It is also important to investigate all extremities in which there is a loss of the pedal pulses in order to insure that arterial

injury is not present. Simple or compound fracture of the lower extremity can cause intimal damage in the popliteal or distal arteries. These intimal damages can obstruct the flow of blood distally and may require an arteriotomy in order to be repaired and to re-establish adequate circulation to the extremity. Therefore, it is important that an arteriogram be undertaken in those cases where such problems exist.

Dr. J. E. Nevin: Approximately 10 years ago, I was involved with a similar case in which the outcome was identical. Because of this case, both myself and several other interested surgeons investigated the pathogenesis and the pathophysiology of the so-called tight cast syndrome. Our observations were similar to those made by other investigators but, in essence, are as follows: A long leg cast of sufficient pressure to provide stability of the fractured bones initially is not tight enough to obstruct arterial flow. However, with swelling of the leg, the tissue pressure within the soft tissue of the extremity raises. Fortunately, it never exceeds arterial blood pressure. Therefore, arterial blood continues to pump into the extremity. However, the pressure is great enough to obstruct neural impulses and to completely obstruct the venous return of the superficial and deeper veins. In our studies, we found that it only requires about 80 mms. of mercury to completely obstruct neural impulses. Therefore, the sequence of events is one of increasing tissue pressure within the extremity, obstruction of the neural impulses, development of an insensitive foot which is not painful, complete venous obstruction with development of a blue foot which is swollen, spontaneous venous thrombosis involving not only the major veins but all the minor capillaries, back-up arterial insufficiency, and eventual death of the extremity. In the cases which we followed, there was no major arterial injury noted, and all efforts undertaken to relieve the situation including milking the leg, excising the fascia, using papaverin as a local vasodilator, continuous epidural anesthesia, intra-arterial procaine drip, etc., had absolutely no influence on the outcome. The reason for the failure of these efforts was the fact that arterial spasm developed secondary to the venous obstruction and direct attack on the arterial side of the vessels is seldom dealt with the etiology. In order to prevent this sequence of events, the extremity must be observed constantly and should this process initiate, it can be reversed up to an eight hour period. After eight hours, it becomes an irreversible phenomenon.

Dr. H. R. Silverman: In view of the high probability that the patient's extremity dies because of lack of sufficient oxygen, I wonder if a small hyperbaric oxygen unit might have provided some therapeutic benefit on the eventual outcome of this extremity.

Dr. F. G. Turner: The use of a hyperbaric oxygen chamber certainly would improve survival of this extremity. Whether or not it would have prevented amputation is a matter of conjecture. However, since such a piece of equipment is not available to us, I feel it should be made a point of record that in the future such equipment might be desirable in a hospital of this size.

Dr. D. W. Boyer: In rural communities, patients most often travel long distances for fracture treatment and postfracture care. For this reason, certain precautions must be taken to prevent post-reduction complications. All too often despite meticulous care and stringent warning by the physician, complications occur as a result of lack of understanding by the patient. There are certain patterns to be followed in an effort to prevent these problems from occurring. In general, the following patients are admitted to the hospital. (1) All compound fractures are admitted for a period of at least 24 to 48 hours. (2) Patients that have had particularly difficult fracture reductions or instability of the reduced fracture. (3)



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Actions—Ovulen acts to prevent ovulation by inhibiting the output of gonadotropins from the pituitary gland. Ovulen depresses the output of both the follicle-stimulating hormone (FSH) and the luteinizing hormone (LH).

Special note: Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product. The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

Indication—Ovulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis and pulmonary embolism and the use of oral contraceptives. There have been three principal studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll[3] was about sevenfold, while Sartwell and associates[4] in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable. Retrospective studies in Great Britain and the United States have shown a statistically significant association between cerebral thrombosis and embolism and the use of oral contraceptives.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Ovulen. Therefore, if such tests are abnormal in a patient taking Ovulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives.

The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Ovulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Ovulen may mask the onset of the climacteric. The pathologist should be advised of Ovulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

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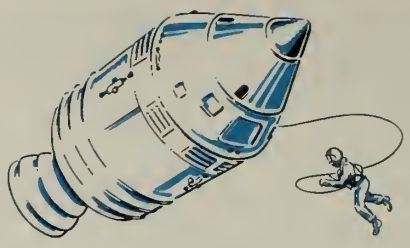


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Dr. S. W. Atkins: I have four distinct rules which I apply to all my patients, two of which were broken in this case. One is that a cast must be split after being applied when you intend to send the patient home. The second is that if at all possible the patient should be hospitalized, and I feel that in a fracture of this type that the need of hospitalization is mandatory regardless of the bed situation. The third is that difficulties of this type do happen because the patient neglects his own difficulty and does not take the time or make the effort to keep the leg elevated. Lastly, when the patient is sent home he should be seen within twelve hours of application of a cast so that if difficulty is developing it can be recognized and altered and what might be a complication can be rectified.

Case Number Two: This patient is a 53-year-old Negro male with a giant condylomata of the penis and perineum. Diagnosis was established by an incisional biopsy. Treatment consisted of daily topical Thiotepa as follows: 30 mgs. in 120 ccs. of water for 10 days, 30 mgs. in 60 ccs. of water for 14 days, 60 mgs. in 60 ml. of water for 4 days, 90 mgs. in 50 ccs. of water for 5 days, 120 mgs. in 60 ccs. of water for 6 days. The treatment was then discontinued when the white blood count began falling. The patient's white blood count remained around 15,000 until four weeks after treatment was begun. The white blood count then began declining gradually from this date, 6-13-68 to 6-23-68, after which it fell quite rapidly to less than 1,000 cells per cubic mm. Treatment was discontinued because of this rapid fall, and the patient was placed on appropriate therapy. The patient's lesions showed only minimal response over this six-week treatment.

Dr. A. A. Hoffman: This mode of treatment was chosen by the attending surgeon because of the patient's generally poor condition and was based upon encouraging published reports of similar treatment of this diffuse condylomata process of the penis. The poor response of this patient's lesion should probably preclude Thiotepa from further use in similar lesions. It is also obvious in this case that Thiotepa can be absorbed from a granulating wound and in quantities which can markedly depress the bone marrow.

Dr. R. M. Morrison: This case graphically illustrates what Dr. Hume has shown when trying to suppress homograft rejection. The rate of white blood count fall is a more important parimeter for bone marrow toxicity than the absolute white count.

Dr. J. E. Nevin: Thiotepa not only depresses white blood count but also red blood count and the platelet count. It causes a more permanent type of bone marrow depression than the antimetabolite because it does not rapidly degrade.

Dr. E. J. Harvie: It takes approximately 10 days for Thiotepa to assert its maximum action on the bone marrow. For this reason, upward adjustment in dosage should not be made sooner than this. I am not familiar with the topical use of this drug but suspect that its absorption is unpredictable because of the large irregular oozing surface of the lesion and the fact that ph changes influence its absorption. It is more important to point out, however, that the dosage should be changed only infrequently allowing at least 10 days on a given dose to determine its effect on the bone marrow.

Correspondence . . . .

Champagne.

Dear Sir:

After reading the Virginia Medical Monthly for March 1970, I should like to take and express strong disagreement with "H.J.W.", who, in spite of his fine taste in Eighteenth Century Furniture, will take such a poor view of champagne. There must be a very bad facet to his personality lurking in a dark alcove of his soul.

However, please tell him that I do agree with his observations on drinking of champagne at large receptions. All light wines are to be enjoyed at leisure and with good company. One fault is the horried shallow "glass" made for sherbert or fruit cocktail in which it is usually served. The proper glass is an 8 or 9 ounce goblet used for claret and filled ½ to ⅔ to the top. Spillage is minimized and the wine will hold its sparkle longer (this is to add to its tasteful qualities, but not tickle the nose).

I trust this will help "H.J.W." see the *light*.

Nelson M. Smith, M.D.

116 South Sycamore Street
Petersburg, Virginia

Pollution—Fluoridation—Malnutrition Cancer—Heart—Stroke—Crime—Insanity

Dear Dr. Warthen:

I am not undertaking to give you all of the technological data I have uncovered in this letter, but just want to say that the basic facts are the destruction of ionic equilibria with its loss of carbohydrate metabolism, both of which are basic mechanisms of life.

The Magnesium Ion (Mg^{2+}) is the ion that releases atmospheric Oxygen (O_2) in all plant and animal life by means of the electromagnetic potential of the ultraviolet rays of the sun. This magnesium ion likewise, with the aid of pyridoxine hydrochloride, sets up citric acid by means of which the sunshine vitamin D sets up the absorption and ionization of the Calcium Ion. This Calcium Ion (Ca^{2+}) is in a delicately sensitive balance (.008 to .010%), forming a critical physiological constant, and it controls the physiological function of the cell membrane, the structure of the cell membrane, its osmotic potential, its neuromuscular irritability, its muscular contraction, its oxidative phosphorilation, besides activating the parathyroid hormone, and the cholinesterase enzyme controlling the breakdown of acetycholine in the nerve fibers and cells of the body and the brain. It also catalyzes the hydrolysis of the lipase enzyme and which breaks down the body's fats to glycerol and many fatty acids for the bone marrow and the brain, and without which there is a degradation of both the brain and the bone marrow, thereby setting up a megaloblastic anemia, and a possible psychosis in the brain tissue.

Now, this fluoride is strongly inhibitive of this Magnesium Ion (Mg^{2+}), in fact destroying its ionic potential, thereby inhibiting the release of atmospheric Oxygen (O_2) in both plant and animal life, and at the same time destroying the ability of the pyridoxine enzyme to set up the citric acid ($C_6H_8O_7$), so that the 10 micrograms, 400 I. U., the minimum daily requirements of the sunshine vitamin D is destroyed by the 1000 or more micrograms per quart of water consumed, both for drinking and the preparation of food.

In the destruction of the sunshine vitamin D there is a morphological damage to the cell membrane of the mitachondria of the cell permitting the utilization of a much greater quantity of citrate than would nor-

mally be necessary, and which would completely change the metabolic rate (the BMR), and which would not be reflected in the PBI, the excretion of which fluoride would set up from the thyroxin hormone, thereby destroying its oxidative potential (to set up the cytochrome C in the cell). The animal protein factor, Vitamin B_{12}, would likewise be lost, setting up a loss of the cytochrome oxidase in the body's cells. Greenstein states in his Biochemistry of Cancer (1954) there is the greatest disparity in the normal and the cancerous cell in the cytochrome oxidase, cytochrome C, plus copper, or a destruction of the citric acid cycle.

W. G. McClure.

4639 Hanover Avenue
Richmond, Virginia
March 7, 1970

DIAGNOSTIC LABORATORY MEDICINE—

(*Continued from page* 314)

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Division of Clinical Pathology
Medical College of Virginia
Health Sciences Division
Virginia Commonwealth University
Richmond, Virginia

Woman's Auxiliary....

Emphasis on VaMPAC in 1970

We now stand on the threshold of what might well be the most crucial election year in the history of our nation. Never has it been more important for physicians and their wives to join forces and make their presence known in the political arena.

Time is always a factor where physicians are concerned, and their primary interest must necessarily be the care and treatment of the sick and suffering. Fortunately, however, they do have the means of making our voices heard—no matter how busy they might be. The Virginia Medical Political Action Committee (VaMPAC) is dedicated to the election of those Congressmen who share the basic philosophy of medicine and its allies.

VaMPAC is a bipartisan organization with one basic objective—a climate in Washington favorable to the preservation of those traditional freedoms associated with the practice of medicine. You as physicians wives are invited to join along with your husbands in this great effort and we can assure you that your dollars cannot be used more effectively or for a better purpose.

When Medicare was enacted in 1965, there were few who believed that the federal government's interest would stop at the over 65 group. Most expected only a breathing spell before the national debate would be renewed—this time on how to finance the health care costs of the rest of the nation. The opening statements of that debate are now being made.

Much has been said in the press—mostly speculative—concerning proposals for a national health insurance system. Articles have referred to the plan of Walter Reuther and his Committee of 100, Senator Edward Kennedy's promise to introduce a bill, Senator Javits on his health care financing proposal, Congressman Durward Hall's suggestion for a two-part health insurance program (the first part to be implemented now, the second part later), the similar bills of Congressman Fulton (D.) Tenn. and Senator Fannin (R.) Ariz. for a tax credit health insurance program, the AFL-CIO plan to broaden Medicare and extend it to all ages, and of course the AMA Medicredit bill.

With this type of crucial legislation being enacted and in the making, the medical profession in all its history, now as never before, needs strong representation in the halls of Congress. With physicians over the nation rallying to its support, it certainly seems that the PAC program is here to stay. It is founded on the belief that the medical profession has learned—the hard way—that it must fight for the nation's health in caucus rooms as well as counsulting rooms, and in primaries as well as laboratories. There are political viruses abroad as dangerous to 180 million patients as any test tube variety ever isolated. Only your representation and membership dollars in VaMPAC can continue this fight, and ultimate success will depend upon patience, endurance, and continuity.

Mrs. Robert D. Keeling
VaMPAC Board Member

The Automobile—Friend or Foe??

. . . These modern vehicles can make life easier and more enjoyable when treated with care and respect. A great deal of emphasis on refinement of the vehicle for greater speed, comfort in travel and beauty for the eye to behold have been the aims in former times. The larger and more complex issues of its relationship to our natural and human resources received little attention. Traffic accidents killed approximately 37,000 individuals and approximately 1,350,000 were injured according to the National Safety Council in 1958. These figures have in-

creased proportionately in subsequent years. The injuries alone average more than 9,000 each day. Highway casualties each week exceed total casualties in Vietnam. Our deaths each day average more than 140, far in excess of our daily losses in combat. These statistics may raise the question about where the war really is. Economic losses exceed 10 billion annually. The personal tragedies are impossible to evaluate on a statistical chart. Automobile graveyards offer visual proof to the fast rising number of accidents and the injuries which must have been inflicted.

It Is Obviously Simpler

. . . to alter the design of automobiles to protect man than it is to change the design of man to resist trauma; therefore, there is a demand for automobile manufacturers to implement better designs and modifications. New driving research is being carried out in the laboratory. Accident research studies are conducted in driving stimulators which create the illusion of actually driving a car; the person at the controls will have his driving behavior responses recorded and later subjected to professional analysis. Safety belts have been made mandatory for all automobiles. Hydraulic "water bumpers", structural changes in tires and numerous other developments have been tested and perfected in the laboratories and should soon be implemented.

One positive method to obtain safety equipment is to request the "Police Package" when ordering a new car. This package includes heavy duty springs and shock absorbers, proper wheels and tires as well as certain interior changes. The major obstacle in obtaining this equipment lies with the dealer. The dealers may deny that these items are available on certain models. Traffic Safety, February 1970, quotes Secretary Volpe of the National Safety Council as saying that "the automotive industry is overly hesistant about putting safety items on the road." Rather than waiting for optimum development, first or second generation safety items could be saving lives today. . ."

The Driver

. . . further complicates the issues of safe driving. Alcohol and drugs head the list in temporary impairment of normal body observation and reactions. Drugs such as sedatives, tranquilizers, antihistamines or stimulants can be readily understood as increasing driving hazards. An equally hazardous factor which tends to be overlooked in spite of available information is alcohol. The social drinker, who shows little or no indication of being under the influence of alcohol is as great a traffic hazard as the alcoholic. In about *fifty percent* of all accidents alcohol is an important factor. At blood alcohol level of 0.10 perecnt, i.e., 3-6 drinks, the accident rate nearly triples. At blood alcohol level of 0.05 per cent, i.e., 2-3 drinks, the accident hazard nearly doubles. Coffee has little or no effect on the drinker, while a full stomach tends to slow the rate of alcoholic absorption. A number of hopefully deterrent measures have been introduced, such as special markers for the car or special license plates for the driver who has been convicted of driving while intoxicated. Vision should be checked periodically. One driver out of five has visual defects that could be corrected or, for which he could compensate with proper glasses.

Better Traffic Laws

"The extensive use of the automobile and its wide range of travel make it vital that our traffic laws are uniform", says Mrs. John R. Halseth, national safety disaster preparedness chairman. "We must support legislation in our states that demand more rigid regulation of road traffic."

Suggestions:

1. Work with your auxiliary legislation chairman.

2. Contact your state legislators when requested.
3. Promote defensive driving courses.
4. Work with your local, state and national Safety Council.
5. Become a member of your state Woman's Highway Safety Committee or the American Association for Automotive Safety. Your husbands can join Physicians for Automotive Safety.

The Highway Safety Commission is establishing Driver Safety Schools throughout the state, which offer offenders' driver courses in lieu of revoking licenses, fines or jail sentences. Anyone is invited to attend one or all of six two-hour sessions. This program is in effect less than a year, so it is too early to evaluate.

The Physicians for Automotive Safety Newsletter, March 1970, recommends action to promote the requirement of safety belts in taxis and airport limousines. Federal regulations requiring seat belts would be necessary before action could be taken in regard to airport limousines. Only public demand can bring about changes. Another area of concern in the P.A.S. Newsletter was the haphazard way in which children are transported at some summer camps. It is up to the individual parents to demand that proper precautions be taken in line with present day knowledge. The auxiliary could assist in bringing this to the public attention.

Much is being done to bring about greater safety on the highways. We could give the pendulum that extra push.

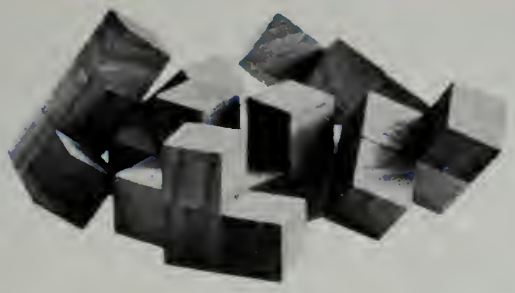
New Film Alerts Medical Assistants to the Pitfalls in Medical Offices

Wyeth Laboratories of Philadelphia has produced a new motion picture, "Case in Point", to dramatize the "do's" and "don't's" for the medical assistant while receiving and caring for patients in her physician-employer's office.

Designed primarily to avoid malpractice suits, the film is subtitled "Medico-Legal Responsibilities of the Medical Assistant". In enactments of the "right and wrong way", it deals with such problems as handling emergencies when the physician is away, medication errors, first-aid problems, missing and stolen prescription blanks, and confidential information. The producers recommend the picture for both physicians and their staffs and suggests scheduling it for a "boss's night" program. It is 25 minutes, 16mm, in sound and color, and available on free loan from Wyeth Film Library, Box 8299, Philadelphia, Pa. 19101. "Case in Point" was premiered in October, 1969, at the Honolulu Annual Convention of the American Association of Medical Assistants.

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Action and Uses: Urised is effective in cystitis, pyelitis, trigonitis in pregnancy, urethritis, and other urinary tract infections where the invading organisms, such as E. coli, S. aureus and albus, are susceptible to methenamine and methylene blue in an acid medium.

URISED also is useful as a prophylactic measure prior to urinary tract instrumentation or operation. In acute fulminating infections, URISED may be used for symptomatic relief while awaiting specific laboratory diagnosis. May be combined with specific therapy where indicated.

Effects: Rapid relief of pain, relaxation of smooth muscle spasm through parasympatholytic action of atropine and hyoscyamine; pus cell content decreased.

Administration and Dosage:

Adults: Two tablets, orally, four times per day, followed by liberal fluid intake.

Children: One-half the adult dose.

Acute cases: Initially two tablets every hour for three doses, followed by the recommended daily administration.

Precautions: Administer with caution to persons with known Idiosyncrasy to atropine and cardiac disease. While under this therapy the urine is blue; patients should be so advised to allay apprehension.

Side Effects: Neither irritation nor untoward reactions have been reported; however, if pronounced dryness of the mouth, flushing, or difficulty in initiating micturition occurs, decrease dosage. If rapid pulse, dizziness or blurring of vision occurs, discontinue use immediately. Acute urinary retention may be precipitated in prostatic hypertrophy.

Contraindications: Glaucoma, urinary bladder neck or pyloric obstruction, duodenal obstruction and cardiospasm. Hypersensitivity to any of the ingredients.

How Supplied: Bottles of 100, 500 and 1,000 tablets.

References: (1) Sands, R. X.: New York St. J. Med. 61:2598-2602, 1961; (2) Renner, M. J., et al.: Hosp. Topics 39:71-73, 1961; (3) Haas, Jr., J., and Kay, L. L.: Southwest. Med. 42:30-32, 1961; (4) Marshall, W.: Clin. Med. 7:499-502, 1960; (5) Strauss, B.: Clin. Med. 4:307-310, 1957.

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Editorial . . . .

Military Medicine—What Is It?

> *"I would remind you again how large and various was the experience on the battlefield, and how fertile the blood of warriors in rearing good surgeons."*
>
> *—Sir Thomas Clifford Allbutt*

WHEN APPROACHED BY A MAN intent upon obtaining employment as a farm hand in one of our bayou abounding southern states, the potential employer asked the interested individual if he could row. "I ain't never tried", responded the man. "What!" exclaimed the proprietor of the farm; "do you mean to tell me you grew up around here and have never learned to row a boat?" "Aw", said the employment seeker, "I thought you meant 'ro' like a lion." Thus was pointed up the necessity of defining just what was meant by "row".

Similarly, it would appear desirable to clarify whether the term, "Military Medicine", implies a practice of medicine peculiar to the military, or the title of a publication.

Suffice it to say that in the context of this editorial offering, it applies to the former only. However, a later editorial on the latter is contemplated.

In the first instance, to state that military medicine is civilian medicine practiced by personnel serving on active duty with the Armed Forces of the Nation is an over-simplification. It is all of this, to be sure, but it is much more.

Military medicine (in addition to being as good or as imperfect as civilian medicine is, or has ever been for a given period applicable to both in our history) entails a concern with a well established program of major responsibilities with which civilian medicine, by and large, is little concerned. This program or mission may be broken down as follows:

(1) The selection of personnel upon the basis of physical and moral fitness and aptitude for serving with the Armed Forces—the choice of assets rather than of liabilities.

(2) Protection against disease or injury of military personnel, and of their dependents, and of civilians employed by the military.

(3) Treatment of disease or injury (either singly or as mass casualties) incurred by all uniformed personnel (either active or retired) of the Armed Services and of their dependents, and of civilians as well, in certain cases when they are employed by the military, but in other instances when there is no direct relationship between the employment of the civilian and the military service.

(4) Disposition of uniformed personnel by (a) return to duty (either full or limited), (b) separation from the service and determination of percentage of disability when conditions warrant, or (c) care of the dead. (The Medical Departments of the Armed Services render care to their people from before the cradle to beyond the grave.)

(5) Maintenance of permanent records relevant to all of the contingencies encompassed under the foregoing subheads.

(6) Provision of special training in military institutions for all uniformed Medical Department personnel, and in either civilian or military institutions for selected personnel, in numbers sufficient to meet the needs peculiar to the Armed Services.

(7) Promotion, activation and support of research pursuits. This latter is a field in which military medicine has for long been outstanding. The world contains many monuments in the building of which military medicine has played a vital role. The Panama Canal is one such monument. Civilian populations the world over have been the beneficiaries of countless contributions made through military medical research—not only to living longer but to living more.

There are a number of areas of medical import in which wearers of the uniform and insignia of one or another of the Armed Services march virtually alone. Many examples might be cited, but to select only one: It is relatively easy to find a doctor capable of giving sound advice and prescribing treatment for a common cold, but let a submarine sink with all or a part of her crew surviving and waiting hopefully to be rescued; where and how many doctors can be found possessed of a specialized knowledge essential to the rescue of those men? The Navy can provide them.

In the numerous and complex health aspects of atomic energy—the matter of protection against its deleterious effects as well as bending it to useful medical purposes—the leaders, principally, have been military doctors. The author of the first textbook on Atomic Medicine is a Navy doctor.

How fast and how far human beings may go into space and for how

long they may remain, function tolerably well and return safely to earth constitute questions with respect to which much research has of late been devoted. In a patently significant measure it has devolved upon military medicine's researchers to find the answer to questions posed in this new field.

"When we assumed the soldier we did not lay aside the citizen." This inscription appears on the frieze inside the alcove of the amphitheater of Arlington's National Cemetery, and is an excerpt from a letter written from New York City by George Washington, under date of 20 June 1775, to the Provisional Congress, in response to an address from that body. (Fourth Edition, Writings of Washington, Volume II, page 501)

While in complete agreement with the foregoing declaration of George Washington, it nevertheless has been the enduring view and contention of this writer that military medicine is sufficiently important in its mission, sufficiently unique in its practice and sufficiently worthy in its achievements to be accorded the status of a specialty sui generis and the recognition inherent in the creation of a Specialty Board of Military Medicine. The existence in the United States, since 1891, of the Association of Military Surgeons, with a current membership of 7,100, whose official publication is a monthly journal entitled "Military Medicine" (to which reference is made in paragraph 2 of this editorial) and whose incumbent President is the Surgeon General of the Navy, comprises a form of support for my claim. The creation during World War II, and maintenance to the present of The Society of Medical Consultants to The Armed Forces consisting of 583 members and including among its select membership the Nation's most distinguished doctors in every field of medical specialization bespeaks the "pith and moment" of military medicine. The designation of a Section on Military Medicine in the organizational structure of the American Medical Association constitutes an additional attestation of the recognition of military medicine as a distinct entity. In 1954, this commentator, as Surgeon General of the U. S. Navy, in company with the then Surgeon General of the U. S. Army, at the instance of the U. S. Department of State, attended an International Congress of Military Medicine and Pharmacy that was held in Luxemburg. Military medicine as a specialty was, of course, the dominant theme or pièce de résistance at that congress. Representatives of approximately fifty nations were present. Thus, augmented by the four foregoing citations are my conviction and my contention with respect to military medicine as a specialty in its own right further bolstered.

H. Lamont Pugh, M.D.

Laburnum House and the Ugly Era

Many terms have been applied to the mixed-up and turbulent times we are living in. One has been called The Ugly Era which is probably as descriptive as any.

IN THE EARLY 19TH CENTURY a tavern by the name of Paradise House was located on Brook Turnpike about two miles north of Richmond. Its name and location suggest it was a pleasant and busy inn, for Brook Road was the first turnpike in the Richmond area. A few miles farther north at Yellow Tavern the road divided; the Mountain road branched off to the left while the Telegraph road veered to the right on its way to Fredericksburg and Washington. Paradise House appears to have been the only inn between Yellow Tavern and Richmond. This state of affairs continued until about the middle of the last century when Paradise House, like many other Virginia hostels, caught fire and burned to the ground.

James Lyons, a prominent Richmond attorney, purchased the site and adjoining farmland and built a large Victorian house which he named Laburnum. Lyons was host to many visiting celebrities, these included Daniel Webster, Henry Clay, William Thackery, and later General Lee and Jefferson Davis. In 1882 Lyons died and Joseph Bryan, a former member of Company D, John S. Mosby's Rangers, purchased Laburnum and laid out an extensive park with a large grove of white oaks interspersed with holly and magnolia. Winding driveways connected the house with Brook Turnpike and Hermitage road. But fire struck again at Laburnum which burned shortly after the turn of the century.

Mr. Bryan obtained the services of architects Parrish and Schroeder, of New York, for the purpose of designing a commodious and also as fireproof a residence as possible. Reinforced concrete flooring and thick fire resistant partitions reduced the fire hazard. The building was begun in 1906 and completed early in 1908. This Georgian house, with a large portico supported by six massive limestone columns, is unquestionably the most handsome residence in Richmond. The brick work and limestone trimming are unsurpassed. Today Laburnum is a little off the beaten path and the growth of the city westward has prevented many Richmonders from being aware of this unusual home. Mr. Bryan died in 1908 shortly after the completion of his house. His son, John Stewart Bryan, inherited Laburnum. He, too, for many years, served as Richmond's

outstanding host, just as Mr. Lyons had done a half century earlier. Winston Churchill, Lloyd George, Franklin D. Roosevelt (while he was governor of New York) and Marshall Petain, hero of Verdun in World War I, visited Laburnum. Mr. Bryan died in 1944 and his son D. Tennant Bryan continued to live in Laburnum until he gave the house and surrounding 14 acres, as the site for the proposed Richmond Memorial Hospital. Here the hospital and a large nurse's home were erected.

A few years later Sheltering Arms left downtown Richmond and moved to Laburnum. This hospital was built to the north and west of the mansion, thus forming two sides of a court with Laburnum serving as the southern boundary. The front of Sheltering Arms is rather impressive but the rear can best be described as undistinguished. This functional, drab appearance served as a foil for the adjacent handsome home but despite this questionable asset Laburnum suddenly found itself being surrounded by its neighbors.

Now ground has just been broken for a new laboratory and outpatient clinic which will occupy most of the court between the hospital and the mansion. It will resemble Sheltering Arms. The new addition will not occupy the center of the court although its frontage will be 30 feet less than the space between the buildings. We are told that the city code requires that an addition of this type cannot be less than 30 feet from a hospital. But it also appears that there is no provision in the code that prevents an addition from encroaching upon another building containing offices and sleeping quarters for residents and laboratory workers.

This means the new four story building will be in physical contact with the entire north wall of Laburnum after all projections, including the portecochere, have been bull-dozed from that side of the mansion. As an added bonus the new building will project 22 feet beyond the front of Laburnum. This takes care of the north side and front of the mansion very effectively. The west side is already obliterated by the connections with the Richmond Memorial Hospital and Sheltering Arms. This means that Laburnum may be viewed in its unaltered state only from the south. This, too, is being corrected by a one story office building which is in the process of being attached to the southwest corner of the mansion. Anyone who wishes to see Laburnum before it is completely destroyed architecturally should do so immediately. He should hasten and not loiter on the way.

H. J. W.

News ....

Calendar of Events

Cardiac Symposium—Sponsored by Montgomery County Heart Association—Bethesda Country Club—Bethesda, Maryland—May 20, 1970.

International Cancer Conference—Sponsored by International Union Against Cancer—Houston, Texas—May 22-29, 1970.

Child Psychiatry Spring Forum—Medical College of Virginia—Richmond—May 29, 1970.

Annual Alumni Scientific Assembly—The Medical College of Virginia—Richmond—June 5, 1970.

Seaboard Medical Association—Nags Head, North Carolina—June 18-21, 1970.

American Medical Association—Annual Convention—Chicago—June 21-25, 1970.

Continuing Education Conference on Reproductive Crises—Presented by University of Virginia Departments of Psychiatry and OB-GYN—Charlottesville—June 26, 1970.

Annual Meeting—Blue Shield of Virginia—Cascades Conference Center—Williamsburg—July 10, 1970.

Medical Aspects of Sports Conference—Sponsored by The Medical Society of Virginia and Virginia High School League—University Hall, Charlottesville—Saturday evening, July 25, and Sunday, July 26, 1970.

Flying Physicians Association—Annual Meeting—Bay Shore Inn—Vancouver, British Columbia—August 23-28, 1970.

American Electroencephalographic Society—Continuation Educational Course on "Current Practice of Clinical Electroencephalography"—Washington, D. C.—September 14-16, 1970.

The Medical Society of Virginia—Annual Meeting—Hotel John Marshall—Richmond—October 11-14, 1970.

American Cancer Society, Virginia Division—Annual Meeting—Hotel Jefferson—Richmond—October 21-22, 1970.

* * * * *

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following new members were received into The Medical Society of Virginia during the month of March:

Humberto M. Albuerne, M.D., Arlington
James Edward Anderson, M.D., Silver Spring, Maryland
Edward Bliley Beirne, Jr., M.D., Richmond
John Gordon Byers, Jr., M.D., Richmond
Fay I. Carr, Jr., M.D., Portsmouth
Quinton Oswald Carr, M.D., Staunton
Richard Savington Crampton, M.D., Charlottesville
Mounir Yacoub Dafashy, M.D., Charlottesville
Robert Allen Dameron, Jr., M.D., Roanoke
Alan Fletcher, M.D., Hampton
Joseph Shermer Garrison, III, M.D., Portsmouth
Walter Lee Grubb, Jr., M.D., Richmond
Halldor Victor Gudnason, M.D., Annandale
Richard D. Kraft, M.D., Roanoke
Henry Byron Larzelere, M.D., Lynchburg
Sidney Allen Lesowitz, M.D., Falls Church
Robert Fletcher Mann, M.D., Norfolk
Joel Andrew Mason, M.D., Norfolk
Clement E. Schotland, M.D., Norfolk
Keith Wade Sehnert, M.D., Rockville, Maryland
Oscar Castillo Tuazon, M.D., Alexandria
Lee William Van Voorhis, M.D., Richmond

Dr. Moore Honored.

Dr. Ray Atkinson Moore, Sr., Hampden-Sydney College physician emeritus, was honored by the College on March 11th. An honorary degree of Doctor of Humanities was conferred on him. Dr. Moore celebrated his ninetieth birthday in January and continues to practice in Farmville. He served as College physician from 1928 to 1961 and also served in the same capacity at Longwood College for fifteen years.

Virginia Physicians Receive Awards.

At the Faculty Convocation at Georgetown University in March, 1970 Silver Vicennial Medals in recognition of twenty years of loyal and distinguished service to the University were awarded to Dr. James M. Moss, of Alexandria, Clinical Professor of Medicine and Director of the Diabetic Clinic, and Dr. Thomas E. O'Brien, Falls Church, Clinical Assistant Professor of Medicine.

Dr. Fitzhugh Mayo,

Virginia Beach, has been named professor and chairman of the new Department of Family Practice at the Medical College of Virginia. The appointment is effective June 1st. He will be responsible for developing programs for the teaching of medical students and training of the house staff in providing primary, comprehensive and continuing patient care furnished by one physician. Dr. Mayo has been in private practice as a family practitioner in Virginia Beach since 1956.

Dr. E. Walter Rice,

Woodstock, has received a prominent place in a recent book listing "Outstanding West Virginians".

Radiology Fellowships.

The following Virginia physicians received the Fellowship degree of the American College of Radiology at its annual meeting in Dallas in April:

Dr. Frank W. Gearing, Jr., Harrisonburg
Dr. George W. McCall, Bristol
Dr. Daniel D. Talley, III, Richmond

Alumni Scientific Assembly.

The thirteenth Annual Alumni Scientific

Assembly will be sponsored by the Department of Continuing Education, School of Medicine, Medical College of Virginia, on June 5th.

The program will be presented by faculty members as follows: Recent Advances in Pediatric Surgery by Dr. Arnold M. Salzberg; Treatment of Hypovolemic Shock by Dr. Charles P. Boyan; The Current Status of Treatment of Diabetic Retinopathy with Photo-Coagulation by Dr. Robert G. King, Jr.; Newer Thoughts on Metabolic Disorders in Children by Dr. Peter Mamunes; New Horizons in Psychiatry by Dr. James L. Mathis; and Streptococcal Bacteremia and Lancefield Serologic Grouping by Dr. Richard J. Duma.

Three and one-fourth prescribed hours of credit by the American Academy of Pediatrics have been applied for.

Wanted.

Full time staff physician for Student Health Service at Virginia Polytechnic Institute, Blacksburg. For further information, write or call Emory R. Irvin, M.D., Blacksburg 24060. Phone 552-6444. (*Adv.*)

Wanted.

Doctor to share medical offices in excellent location, one or two afternoons a week, in Fairfax City, Mosby Building. Suitable for obstetrician, gynecologist, otolaryngologist, psychiatrist or dermatologist. Call (703) 273-3613. (*Adv.*)

Emergency Room Physician Wanted.

Full time emergency room coverage in active emergency room of 191-bed, accredited hospital in the beautiful Shenandoah Valley of Virginia. Guaranteed annual income. Contact administrator, King's Daughters' Hospital, Staunton, Virginia 24401. (*Adv.*)

Position Wanted.

Obstetrician-gynecologist, board eligible, 32 years old, married, two children, with research experience, seeks either full time position in teaching institution or partnership with practice in center with teaching possibilities. Military obligations satisfied January 1971. Reply to Balazs Selendy, M.D., 313 Chamberlin Avenue, Colorado Springs, Colorado 80906. Phone 303-576-1839. (*Adv*).

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I adore this house.
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The neighbors are wonderful.



Indications. For use in management of anxiety and tension occurring alone or as accompanying symptom complex to medical and surgical disorders and procedures. Though not a hypnotic, fosters normal sleep through antianxiety and related muscle-relaxant properties.

Contraindications. History of sensitivity to meprobamate.

Important Precautions. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient; if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case); thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely. After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures. Prescribe very cautiously and in small amounts for patients with suicidal tendencies. Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy. (CNS stimulants and pressor amines as indicated.) Doses above 2400 mg./day are not recommended.

Composition. Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. (All tablets also available in REDIPAK® (strip pack). Wyeth.) Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

The young homemaker her underlying anxiety and tension can surface and intensify under the continuous stress of rearing a growing family. Especially when she's confined to the home and its environs so much.

You can help her over the rough spots with reassurance and counsel. Equanil can help relieve tension, ease anxiety—with little risk of serious side effects. Time and experience will probably do the rest.

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(meprobamate)

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ell, Dr. Cunningham! I was just telling Herbert should talk to you about my allergy. rst my nose starts to tickle and..."

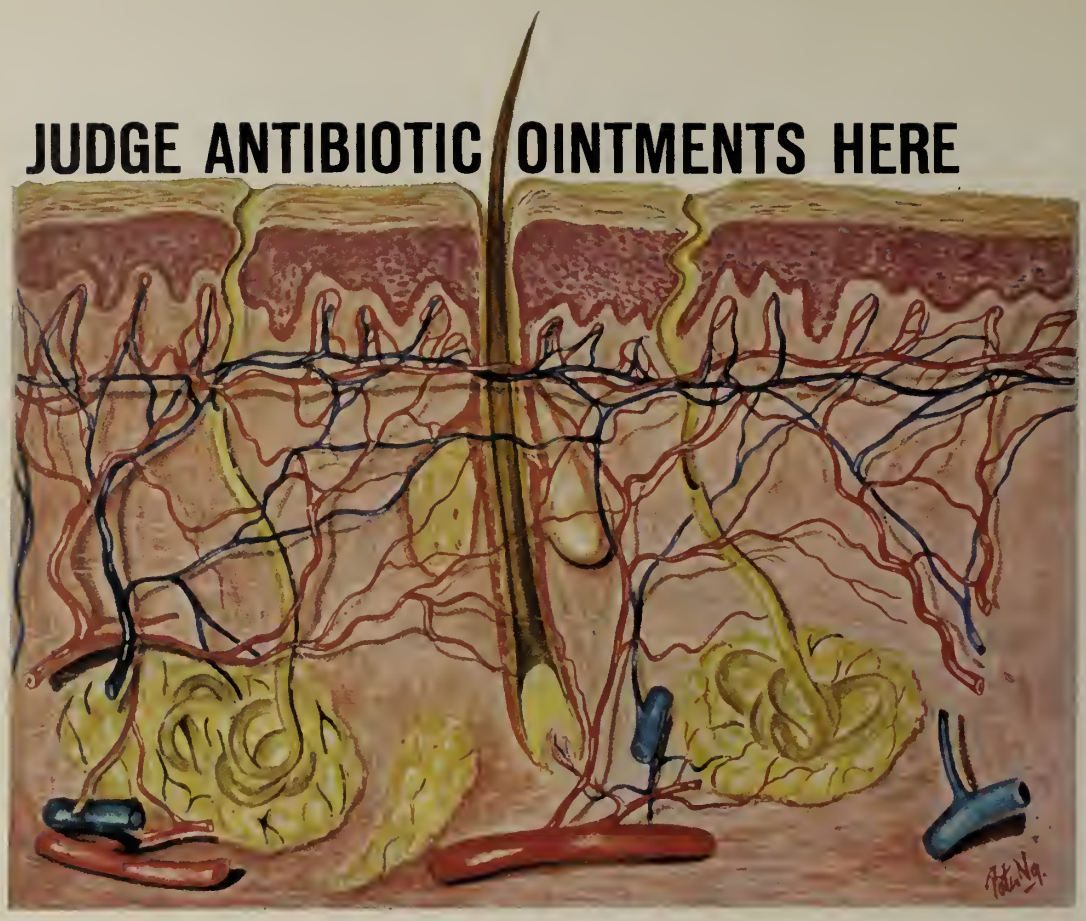
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It is summarized on this page.

Where there's no will there's a therapeutic way.

*Among persons 20% or more overweight as compared with median weight for persons of like height and sex.

1. Kannel, W.B., *et al.*: *Circulation* 35:734, 1967.
2. Thomas, H.E., Jr., *et al.*: *Med. Times* 95:1099, 1967.
3. Albrink, M.J., in: Beeson, P.B. & McDermott, W. (eds.): *Cecil-Loeb Textbook of Medicine*, ed. 12, Phila.: W.B. Saunders Co., 1967.

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Obituary . . . .

Dr. Otis Taylor Amory,

Newport News, died March 7, after a long illness. He was eighty-two years of age and received his medical degree from the former University College of Medicine, Richmond, in 1913. Dr. Amory was on the surgical staff of the former Elizabeth Buxton Hospital and Riverside Hospital and was on the faculty of each hospital's school of nursing. He served four years on the Virginia State Hospital Board and was instrumental in initiating the transfer of Eastern State Hospital from Williamsburg to Dunbar. Dr. Amory served on the School Board at Newport News and was a member of the Board of Trustees of the Virginia Methodist Children's Home in Richmond. He served in the Army Medical Corps in World War I and was a procurement and assignment officer for World War II, as well as being a Red Cross Instructor. Dr. Amory was a charter member of the Kiwanis Club and had been a member of the Shrine temple for fifty years.

Dr. Amory had been an active member of The Medical Society of Virginia since 1913.

His wife and a son survive him.

Dr. Robert Matthews,

Norfolk, died March 19, at the age of seventy-seven. He received his medical degree from the University of Pennsylvania in 1920. Dr. Matthews had practiced in Norfolk from 1922 until his retirement in 1965. He was formerly president of the medical staff at Norfolk General Hospital and was on the staffs of DePaul and Leigh Memorial Hospitals.

Dr. Matthews was president of the Norfolk County Medical Society in 1955. He had been a member of The Medical Society of Virginia for forty-seven years.

His wife and two daughters survive him.

Dr. David Wright Kelly, Jr.,

Culpeper, died February 24, having been in ill health since 1958. He was seventy-three years of age and graduated from the Medical College of Virginia in 1924. Dr. Kelly had practiced in Culpeper County for thirty-five years and was on the medical staff of Culpeper Memorial Hospital. He was a veteran of World War I and a former member of the Culpeper Rotary Club.

Dr. Kelly was a member of The Medical Society of Virginia, having joined in 1924.

His wife, a son and a daughter survive him.

Dr. Samuel Armistead Anderson, Jr.,

Richmond, died March 10 at his winter home in Captiva Island, Florida. He was seventy-two years of age and graduated from Johns Hopkins University Medical School in 1923. Dr. Anderson was clinical professor emeritus of Pediatrics at the Medical College of Virginia and had served at the College from 1928 until his retirement in 1968. He was one of the founders of their Consultation and Evaluation Clinic Program for Mentally Retarded Children. In 1969 he received from the Medical College of Virginia their highest citation as Distinguished Pediatrician.

Dr. Anderson had been a member of The Medical Society of Virginia for forty-three years.

His wife, a son and two daughters survive him.

Dr. Augustine Joseph Russo,

Portsmouth, died March 20 at the age of seventy-four. He was a graduate of the Medical College of Virginia in 1921 and had practiced in Portsmouth since that time. Dr. Russo was on the staff of Maryview and Portsmouth General Hospitals.

Dr. Russo was a member of The Medical Society of Virginia for fifteen years.

A son and a daughter survive him.

Dr. Emmett.

Dr. John M. Emmett, Clifton Forge, died December 27, 1969, of an acute coronary thrombosis at his office in the C. & O. Hospital immediately after making rounds on the floor. This prominent physician and surgeon was born in Oxford, N. C. and was 76 years of age.

He received his premedical training at the University of North Carolina and his medical training at the Medical College of Virginia, 1911-15. He subsequently took his surgical training at the Medical College of Virginia and other medical centers.

He moved to Clifton Forge in 1920 and for the 50-year residence there he first became the Chief of the Surgical Service of the C. & O. Hospital, Clifton Forge, from 1920-1939 and then Chief Surgeon of the C. & O. Hospital Association and C. & O. Railroad Co.

He is correctly given credit for building an excellent 225 bed hospital staffed with specialists in the several related departments and also developed a coveted reputation for excellent work, devotion to duty, and service to his community.

Along his life's journey he received many honors. A list of a few of them are as follows: Chief Surgeon of C. & O. Railroad System, Fellow of the American College of Surgeons, President of The Medical Society of Virginia in 1942, Vice-President of the First National Bank of Clifton Forge, member of the board of visitors of the University of Virginia. And most important of all listings, an active member and worker in the First Presbyterian Church of Clifton Forge.

On behalf of the members of the Alleghany-Bath Medical Society, we want to express our appreciation for the friendship and loyalty of this outstanding man and for his services to his community, his country, and his profession.

Be it resolved that the Alleghany-Bath Medical Society extend its sympathy to his family in the loss of their father.

Be it also resolved that a copy of this resolution be sent to the Secretary of The Medical Society of Virginia and to the Alleghany-Bath Medical Society to be recorded in its minutes.

Ira T. Hornbarger, M.D.
Thomas M. Winn, Sr., M.D.

Dr. Cary.

In the death of Dr. Samuel Beverly Cary on February 2, 1970, the citizens of Roanoke and the medical profession lost one of their finest citizens and most dedicated physicians. Bev, as he was affectionately known by his many friends and colleagues, was a pioneer in the specialty of urology, not only in his city, which he loved so devotedly, but nationally as well. Those of us who were fortunate enough to have known him as a friend and fellow physician will always remember his warm friendship, his superior professional ability and his intense loyalty to the private practice of medicine. He was an ardent exponent of the dignity of man and of his right to decide his own destiny; and for a long time, he was disturbed by what he believed to be the gradual loss of our freedom to practice medicine as he believed best for his patients and his profession. To describe his character in a few words, "He had the human touch."

Dr. Cary was a native of Gloucester, Virginia. He graduated from the College of William and Mary and the Medical College of Virginia. He was Lewis-Gale Hospital's first intern in 1912 and did his postgraduate work at the New York Polyclinic Hospital and the University of Pennsylvania. He was a former president of the Roanoke Academy of Medicine, a fellow of the American Urological Association, and a consultant in urology on the staff of most Roanoke hospitals before his retirement from active practice in 1962. He was also a member of The Medical Society of Virginia, the Southern Medical Association, and the Southwestern Virginia Medical Society. He served his country well during two world wars.

It is a measure of this man that during his last few years of declining health he never lost his zest for life. His warm smile and gracious personality to the end were the mark of a gentleman who had served his family, his community, and his profession in a manner worthy of emulation by those of us whom he leaves behind.

He is survived by his wife, a daughter, a granddaughter and a grandson of Roanoke, and a sister.

Your committee requests that this Memorial be made a part of the records of the Roanoke Academy of Medicine, that it be published in the Virginia Medical Monthly, and that a copy be forwarded to his family with the expressed deep sympathy of this Academy.

Allen Barker, M.D., *Chairman*
Richard M. Newton, M.D.
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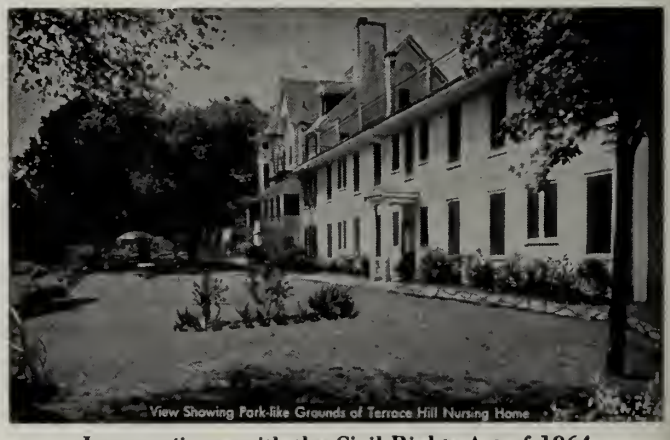
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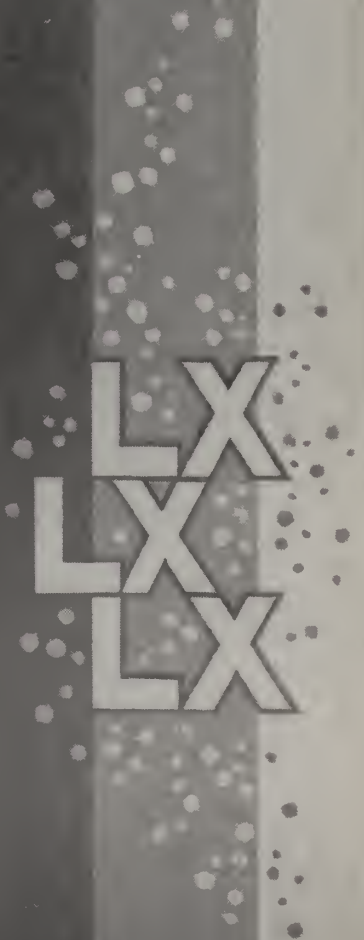
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(1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

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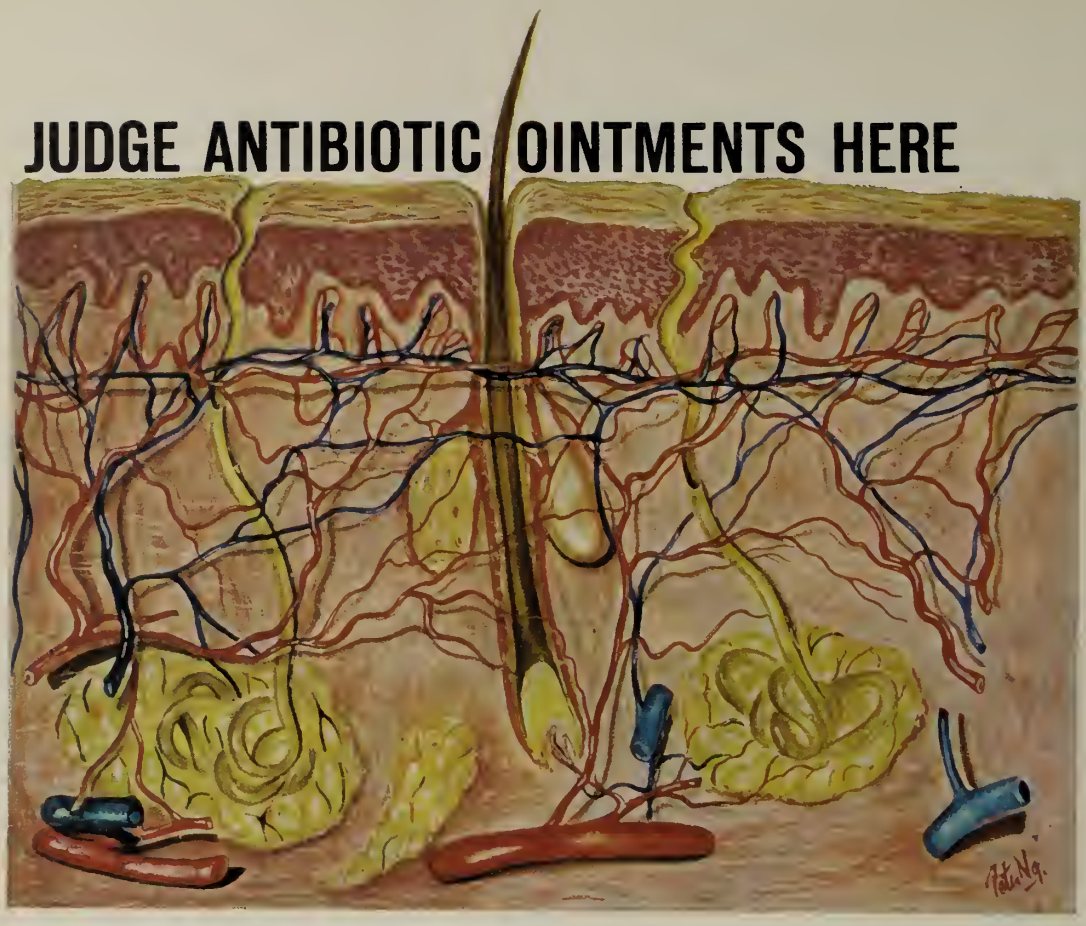
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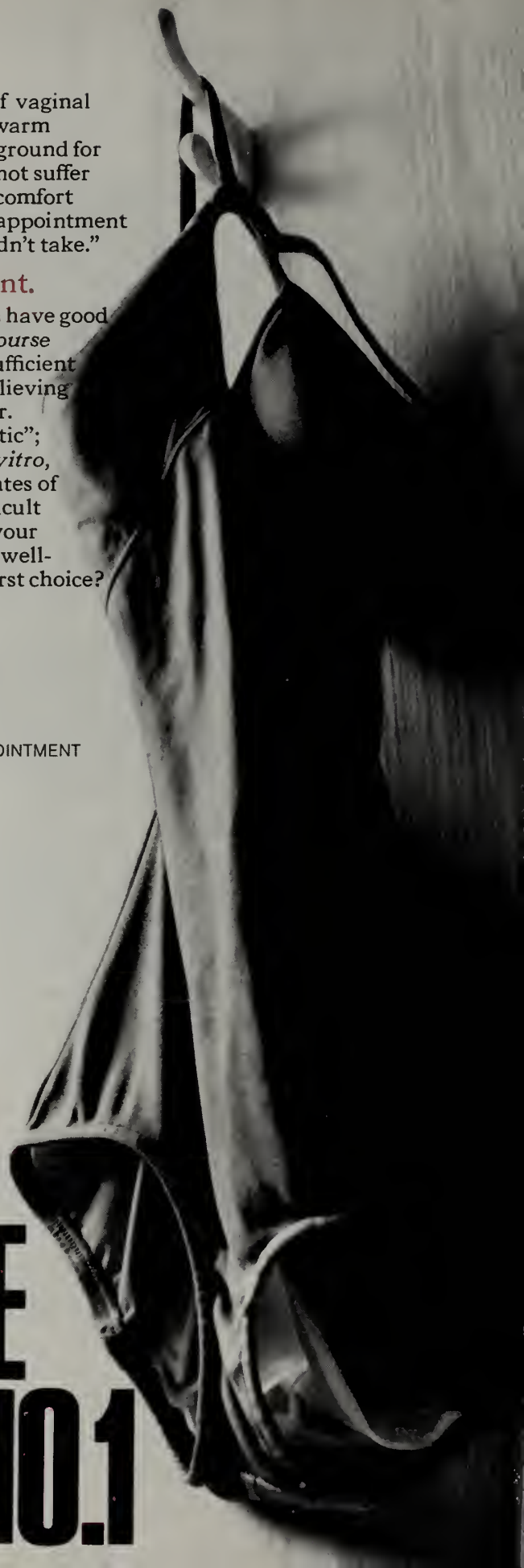
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CANDEPTIN Vaginal Ointment contains a dispersion of candicidin powder equivalent to 0.6 mg. per gm. or 0.06% candicidin activity in U.S.P. petrolatum. 3 mg. of candicidin is contained in 5 gm. of ointment or one applicatorful. CANDEPTIN Vaginal Tablets contain candicidin powder equivalent to 3 mg. (0.3%) candicidin activity dispersed in starch, lactose and magnesium stearate.

Indications:
Vaginal moniliasis due to Candida albicans and other Candida species.

Contraindications:
Patient sensitivity to any of the components. During pregnancy manual tablet insertion may be preferred since the use of the ointment applicator or tablet inserter may be contraindicated.

Caution:
Clinical reports of sensitization or temporary irritation with CANDEPTIN Vaginal Ointment or Vaginal Tablets have been extremely rare. To avoid re-infection, it is recommended that the patient refrain from sexual intercourse during treatment or the husband wear a condom.

Dosage:
One vaginal applicatorful of CANDEPTIN Ointment or one Vaginal Tablet is inserted high in the vagina, twice a day, in the morning and at bedtime, for 14 days. Treatment may be repeated if symptoms persist or reappear.

Dosage forms:
CANDEPTIN Vaginal Ointment is supplied in 75 gm. tubes with applicator (14-day regimen requires 2 tubes). CANDEPTIN Vaginal Tablets are packaged in boxes of 28, in foil, with inserter—enough for a full course of treatment. Store under refrigeration.

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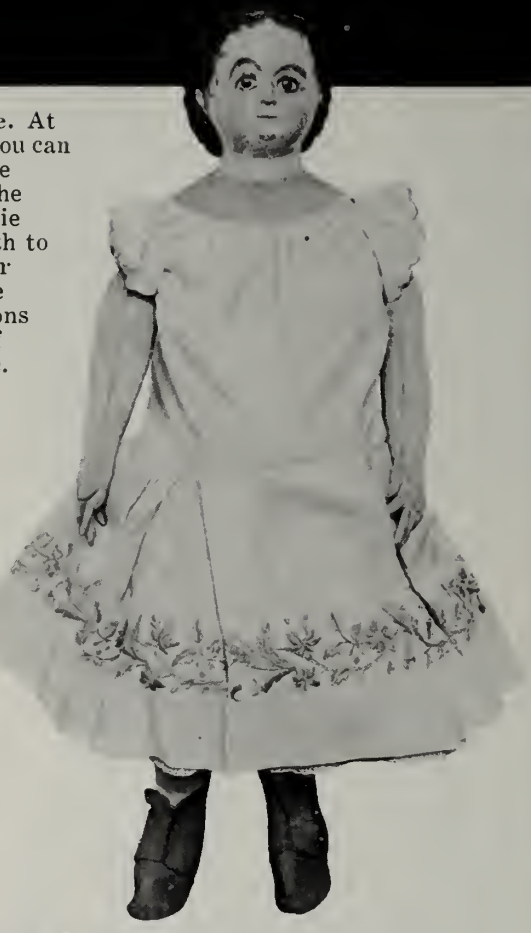
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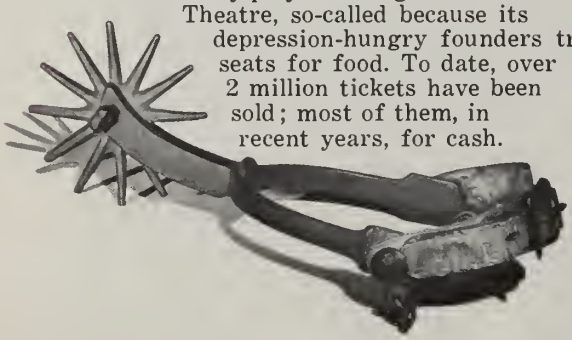
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Guest Editorial....

Early Disease Detection

EARLY DETECTION of disease aims at discovering and curing conditions which have already produced cellular or biochemical change but which have not so far reached a stage associated with symptoms for which medical aid is sought spontaneously. The idea of early disease detection is not new. Even the ancient Romans emphasized the value of looking for potential disease. For many years, however, the attention of the medical profession has, by necessity, been focused on the vast burden of overt communicable disease. Now this situation is changing and it is predicted that, in the future, early detection will play a larger and more important role in the practice of medicine.

In the developed countries communicable diseases have become less prominent killers than chronic diseases and professional attention is being diverted accordingly. The chronic diseases that have now come to the fore are often of insidious onset and of such nature that, if detected early, they stand a chance of being cured or controlled. The various early disease detection methods that are available have evolved in conjunction with contemporary technical capabilities and professional interests.

One method, emphasized by the American Medical Association for the past fifty years, is the periodical health examination. In 1948, the Journal of the American Medical Association, in an editorial comment, stated that the major diseases which afflict the population could be uncovered through the employment of laboratory tests and a medical history together with a physician's examination. It further indicated that proper use of the laboratory results would allow the physician to accomplish the health examination with economic advantage both to patient cost and expenditure of the physician's time.

Although many private practitioners and industrial physicians accept and utilize this method, severe limitations have been demonstrated in its application. The physician usually accepts, and the patient demands, that he give first priority to the diagnosis and treatment of the sick. This, coupled with the growing problem of medical manpower, precludes the widespread application of periodical health examinations for early disease detection within the physician's practice. Even if the physician

has the time and the inclination to perform many more periodical health examinations, ethical considerations will proscribe his efforts to seek incipient disease in patients outside his practice. Under these conditions, in our mobile society where many individuals do not have a personal physician, it is difficult to imagine the application of the personal periodic health examination as an effective tool for early disease detection in large population groups.

Another method of early disease detection which involves the application of presumptive tests to apparently well individuals has become popularly known as "screening". The Commission on Chronic Illness Conference on Preventive Aspects of Chronic Disease, held in 1951, defined screening as . . . "the presumptive identification of unrecognized disease or defect by the application of tests, examinations or other procedures which can be applied rapidly. Screening tests sort out apparently well persons who probably have a disease from those who probably do not. A screening test is not intended to be diagnostic. Persons with positive or suspicious findings must be referred to their physicians for diagnosis and necessary treatment." [1]

Following World War II, official health agencies became advocates of screening programs for case finding and epidemiological purposes. The early screening activities were usually disease specific, relied on a single test, and were applied in "mass surveys" involving large numbers of people. Examples of such programs are mass chest x-ray surveys for tuberculosis and mass blood testing for syphilis. As screening programs became more popular and funds became available for their implementation, other test and examination procedures were added. These mass surveys offering combinations of single screening tests were described as multiple (or multiphasic) screening. Although the original multiphasic screening programs served a useful purpose in many instances, frustrating problems in obtaining follow-up for the definitive diagnosis of positive screening results, and criticism of the cost/yield ratio, created serious questions as to their value. Also central to the controversy were the problems of test sensitivity, specificity and reliability associated with the then available screening equipment. As a result of these factors program budgets were reduced and screening popularity waned.

In the late 1950's the first effective way of analyzing blood serum sequentially appeared on the market as an auto-analyzer. The success of this innovation spawned competition in this country and abroad resulting in the creation of a new health industry. In the beginning, the new industrial innovations and services were primarily concerned with the production and marketing of hardware machines for "multiphasic chemical screening" of blood serum. As the medical need and demand inspired the organization of new industrial enterprises, other biomedical apparatus and automated instrumentation became available. The improvements in

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1. Commission on Chronic Illness (1957) in the United States, Vol. 1, *Prevention of Chronic Illness*, Chapter 5, pp. 45-47, Harvard University Press, Cambridge, Mass., 1957.

the "state-of-the-art" permitted by new automated instrumentation resolved some of the reliability and cost/yield questions associated with earlier multiphasic screening efforts and encouraged renewed attention to early disease detection.

In the early 1960's a systems approach was used to combine automated, electronic and computer equipment to a variety of screening test batteries. A notable example of this approach was developed by the Permanente Medical Group of Oakland, California. Their multiphasic screening program uses automated equipment to provide comprehensive quantitative testing for a large number of diseases. A statistical method is used which automatically determines whether selected diagnoses are likely to be present or absent based on predetermined criteria.

The collection, manipulation and storage of data through data processing has added further sophistication to automated screening procedures. The use of the computer not only allows the more rapid processing of large numbers of screening tests but also contributes to their greater accuracy and to the reduced expenditure of the time of highly trained personnel.

The potential uses of such new systems are indicated by the recent action of the Division of Medical Care Administration of the U.S. Public Health Service in contracting for the development of four demonstration programs utilizing automated or semi-automated equipment to make health assessments of adult populations; contracts have been awarded to Tulane University School of Medicine, Milwaukee City Health Department, Brookdale Hospital Center (Brooklyn, N. Y.), and Rhode Island Hospital. The Regional Medical Program is also assisting in funding the development of multiphasic health screening services, located in a neighborhood setting, in Nashville, Tennessee. The Senate hearings on multiphasic screening in 1966 and the "Preventicare" bills of 1966 and 1967 further indicate public and governmental interest.

For the past two years the sales growth of companies producing automated screening instrumentation has been paralleled by the rate of organization of new companies proposing to market multiphasic screening system packages of various designs. Industrial medical programs, hospitals, group practices, insurance companies, labor unions, and new private venture organizations are either being approached or are seeking to enter the field.

Without attempting to judge the merit of this new attention to early disease detection, one must recognize its presence. In this recognition it becomes apparent that, in the future, early disease detection through multiphasic screening services will involve both the physician and the patient in the provision of health care.

R. W. Jessee, M.D.

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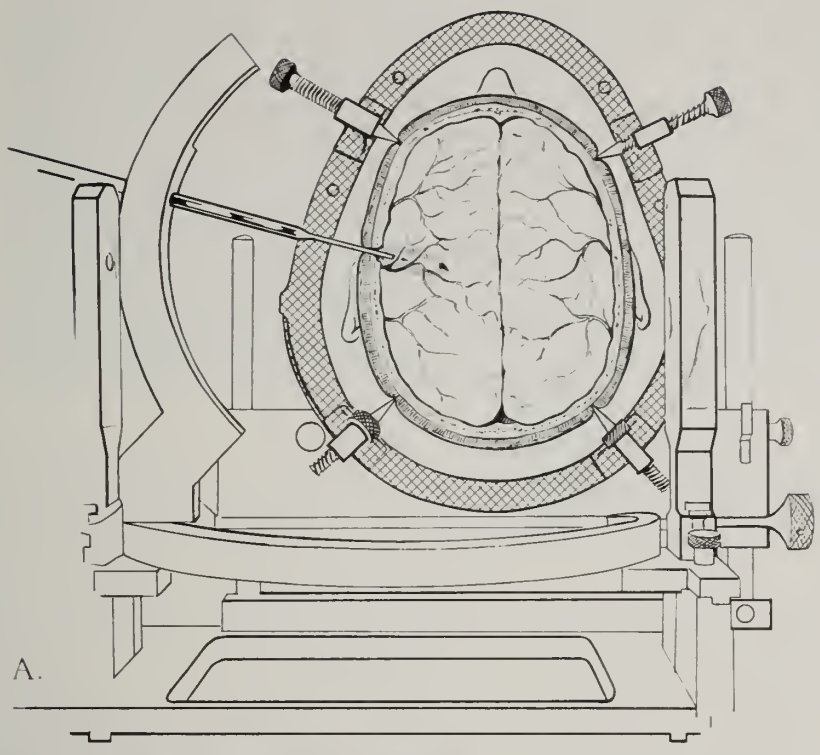
Stereotactic Localization of Cerebral Foreign Bodies

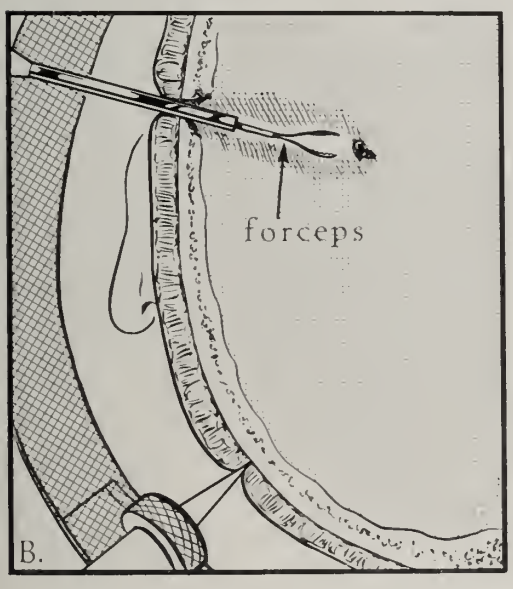
JOSEPH T. McFADDEN, M.D.
Norfolk, Virginia

Bullets and other foreign bodies embedded in the brain were once best left alone when searching increased the existing damage. Now, however, it is feasible with modern equipment to remove most of these without extending the wound.

A BULLET or a similar foreign body within the skull cavity may appear, on x-ray pictures, easy to find and remove. Embedded in the brain at the end of a tract strewn with bone fragments and metallic debris, the missile seems to lie in a trail easily followed. More often than not, however, this appearance is deceptive, and the missile eludes the most intent search. Occasionally it appears with other matter erupting from the wound during debridement—clots, bone fragments, metallic fragments, necrotic brain, and fresh blood—or the surgeon finds it with the soft catheter used to irrigate the depths of the wound. Otherwise, the bullet causes less harm when left in situ than that done by determined efforts to find it for removal.[6] Removal, though, is the object of treatment in the minds of the patient's relatives. And removal was the object of treatment in the minds of physicians for centuries before modern concepts evolved during World Wars I and II. Cushing,[1,2] in his pioneer work on missile injuries of the brain, cautioned against increasing the brain damage by persistent searching, and he relegated removal as secondary to proper debridement and supportive treatment.

Old concepts are not entirely dead, however, nor does the modern surgeon rest easy so long as he has to compromise by leaving the bullet in the brain. Eventually an abscess[3,4] may form from latent infection or inflammatory reaction secondary to corrosion or degradation of the metal.[9] Also the bullet may change position gradually to damage more sensitive areas.[5,7,10] Textbook illustrations depicting easy methods of debridement and foreign body removal, e.g., a quiescent clean tract held open in the brain with a lighted retractor, readily revealing the bullet fragments for removal, do not help, for they are totally unrealistic. Edematous pulped brain and severe bleeding always obscure a path of destruction caused by a missile. Retraction, beyond that needed to aid hemostasis and to perform adequate debridement, not only fails to reveal accurately the direction and extent of the penetration pathway, but also increases the existing brain damage. Indeed, the angry swollen brain, bounding and pulsatile, may quickly engulf the retractor in response to pressure applied on the damaged walls of the destroyed tract. When using conventional equipment, the surgeon then can only retreat. Often it is wise never to have started. Persistent probing along a path of destruction traversing vital areas of the brain, to remove a bullet from a terminal patient, has no sound therapeutic basis. Perhaps the most famous patient so treated was Abraham Lincoln.[8] In the nine hours between his injury and death, the path of destruction





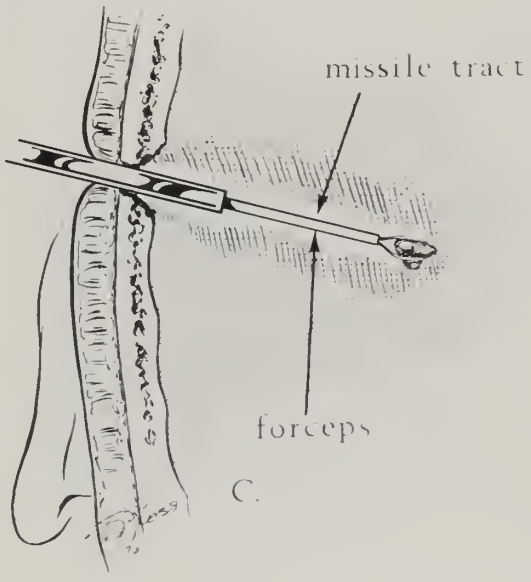


Fig. 1.

(A) Demonstrates axial instrument approach through the cranial trajectory.

(B) Forceps approaching through the destroyed tract (trajectory) in the brain.

(C) Forceps grasping and removing bullet without causing additional brain damage.

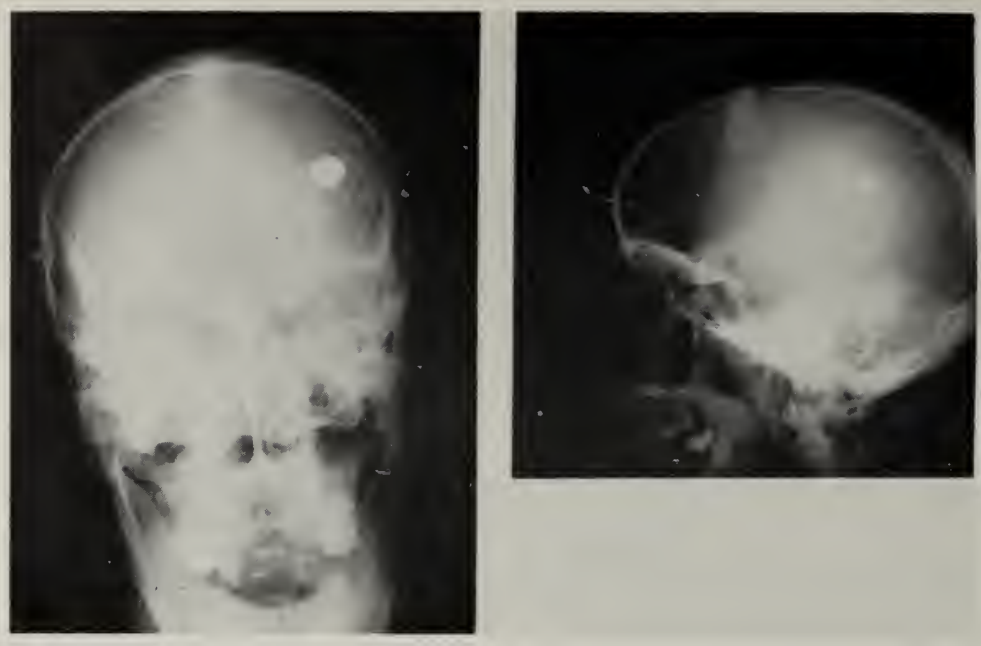


Fig. 2. A.P. and lateral views of the skull showing bullet lateral to the left lateral ventricle.



Fig. 3. A.P. and lateral views showing the bullet placed on target. Reproduced from Polaroid pictures.

from the left occipital region into the frontal areas of his brain was probed futilely several times with unclean fingers and unsterile probes. This therapeutic concept, founded on emotional reaction, as though the bullet had mind and intent of its own and its capture would rescue the victim, offers no help to the patient and rests on no reasonable tenet.

At the other end of the spectrum, removal of the bullet assumes increasing importance with certain injuries. When the bullet has not crossed medial to the lateral ventricle, and the patient seems salvageable, removal enhances the chances of recovery without infection and other serious complications. Of more importance, a bullet crossing non-vital areas of the brain to the vicinity of the opposite cortical surface may cause the formation of a large hematoma where it stops; intracranial pressure rapidly increases and the sensorium and vital functions deteriorate. Localization and removal then become an urgent matter.

So, removal of the missile remains one of the objects of treatment, when it is possible without further damaging the injured brain. Modern equipment now extends this range of possibilities to include all patients not terminally damaged. The Todd-Wells stereotactic guide, designed primarily for cryo- and radio-frequency thalamotomy and hypophysectomy, lends itself especially well to the precise localization of embedded supra-tentorial foreign bodies of the brain. Any chosen intracranial target can be



Fig. 4. Showing probe passed along penetration path to the target (bullet). Reproduced from Polaroid pictures.

placed at a focal point in the assembled apparatus. It is then possible to support and guide surgical instruments to the target along an infinite number of spherical radii, e.g., through a burr hole placed anywhere in the cranium or through the entry hole made by the foreign body. Only the trajectory need be estimated from anterior-posterior and lateral skull views, and the guide adjusted accordingly in its horizontal and vertical ranges. The guided instruments then follow the path of destroyed brain onto the target (foreign body) without causing new damage. Removal can be accomplished by guided micro-instruments or by following a probe with macro-instruments.

Case 1 (fig. 2). The first operation on this 29 year old Negro male with multiple large caliber gun-shot wounds (elbow, lip and brain) accomplished scalp and skull debridement and removal of necrotic brain and many bone fragments by catheter irrigation. The bullet, however, could not be felt with the catheter. The patient was returned to the operating room on the following day, his head placed in the Todd-Wells stereotactic apparatus and the bullet (target) adjusted to the focal point (fig. 3). A probe was then passed to the bullet (fig. 4). Removal was accomplished with macro-instruments following along the probe shaft. The patient recovered.

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Norfolk, Virginia 23507

Neuroblastoma

A Review of the Experience at The Medical College of Virginia (1957-1968)

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HAROLD M. MAURER, M.D.
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The poor prognosis of patients with neuroblastoma is due to the difficulty of early diagnosis and the lack of effective treatment for advanced disease.

NEUROBLASTOMA (NB) AND GANGLIONEUROBLASTOMA (GNB) are common malignant solid tumors in infants and children following in frequency tumors of the CNS.[1] Since the introduction of radiotherapy in the management of these tumors, the prognosis for localized disease in children over one year of age has improved. However, the existence of distant metastases, especially in the bones and bone marrow, result in a high percentage of curative failure. Chemotherapy, in contrast to Wilm's tumor, has not been very successful. Cytoxan alone or in combination with Vincristine are the drugs of choice at the present time to treat patients with widespread disease. An overall cure rate of 35 to 40% has been reported.[2,3] In patients under one year of age who have localized disease, survival rates as high as 68-70% have been achieved;[3,4] however, in generalized disease the survival rate has been estimated at about 12%.[3] In an attempt to evaluate the various factors involved in the prognosis of this disease, we have reviewed the experience with NB and GNB at the Medical College of Virginia during the period of 1957 through 1968.

From the Department of Pediatrics, Medical College of Virginia.

The authors wish to express their gratitude to Miss Diane Hargrave for her assistance in preparation of this manuscript.

Case Material

Twenty-three histologically documented cases were seen in an 11 year period (Fig. 1). Twenty-one were classified as NB and two

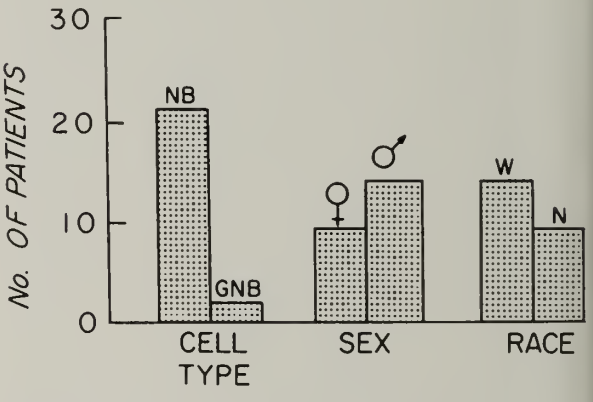


Fig. 1. Cell type, sex and race incidence of 23 patients with either neuroblastoma or ganglioneuroblastoma.

as GNB. Of the entire group only two patients are alive. One child with localized intrathoracic NB, age five months at the time of diagnosis, had total resection of the tumor, radiotherapy and Cytoxan. He has no evidence of disease after 33 months. The other patient six months of age at diagnosis

has widespread disease from an adrenal NB. She has achieved a partial response to Vincristine and Cytoxan and is alive after six months. Figure 1 also shows the sex incidence of the disease. Slight male predominance was found (14/23). Figure 2 shows the age distribution of the patients at diagnosis.

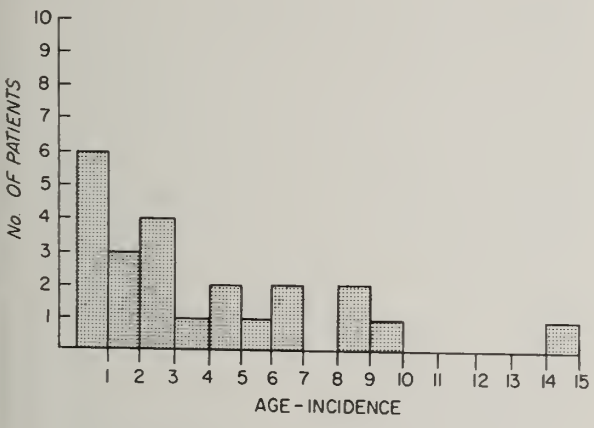


Fig. 2. Age incidence of 23 patients with neuroblastoma or ganglioneuroblastoma at diagnosis.

The locations of the primary tumor are shown in Table 1. The commonest site of

Table 1

Primary Tumor Site

Location	*No. of patients*	*Percent*
Right adrenal	8	52%
Left adrenal	3	
Retroperitoneal	5	23%
Mediastinum	4	17%
Brain	1	4%

the primary tumor was in the adrenal gland (52%). Other less common sites included the retroperitoneum (21%), posterior mediastinum (17%) and brain (4%). The primary site could not be determined in one patient (4%). Table 2 shows the extent

Table 2

Stage of Disease at Diagnosis

Widespread—17 cases (16 NB—1 GNB)	74%
Regional — 6 cases (5 NB—1 GNB)	26%

of the disease when first seen. In the majority of cases (74%) the disease was already widespread at the time of initial examination. As shown in Table 3, distant

Table 3

Common Sites of Metastases

Location	*No. of patients*	*Percent*
Bone	11	48%
Bone marrow	11	48%
Liver	11	48%
Lung—pleura	7	35%
Mediastinum	4	17%

metastases occurred most often in the bones (48%), bone marrow (48%), and liver (48%) although at autopsy an unusually high percentage (35%) had metastases to lung and pleura. Those with regional disease developed metastases within 12 months of diagnosis.

Common presenting symptoms are shown in Table 4. Abdominal pain, fever, anorexia, and abdominal enlargement occurred most frequently. The mean duration of symptoms prior to diagnosis was 21 days. Common physical findings are shown in Table 5. Abdominal mass and hepatomegaly were the leading abnormalities seen.

Table 4

Common Presenting Symptoms

Symptoms	*No. of patients*	*Percent*
Abdominal Pain	8	34%
Fever		
Anorexia	5	21%
Abdominal enlargement	4	17%
Abdominal mass		
Vomiting		
Diarrhea	3	13%
Limping		
Paraplegia		
Paresthesia	3	13%

Table 5

Common Physical Findings

	No. of Patients	*Percent*
Abdominal mass	14	60%
Hepatomegaly	8	34%
Hypertension	5	21%
Paralysis	4	17%
Strabismus	3	13%
Diarrhea	3	13%
Fever	3	13%
Proptosis	2	8%

Twenty-four hour excretions of VMA were measured in seven patients. Elevated levels were found in five patients, three with NB and two with GNB.

Table 6 shows how the six patients with

TABLE 6

TREATMENT IN PATIENTS WITH REGIONAL DISEASE

(total 6 patients)

	No. of Patients
Complete Resection	3
Partial Resection	1
Biopsy	1
Radiotherapy	5
Cytoxan-Vincristine	5
No treatment	1

regional disease were treated. Three patients had complete resection, one partial resection and one biopsy of the tumor. Following surgery all but one patient received radiotherapy and Cytoxan and/or Vincristine. One patient was found at post-mortem examination to have intracerebral NB and thus received no therapy. Of this group only one patient (16%) is alive without evidence of disease. He has survived for 33 months.

Table 7 shows how patients with wide-

TABLE 7

TREATMENT OF PATIENTS WITH WIDESPREAD DISEASE

(total 17 patients)

	No. of Patients
Biopsy	13
Partial Resection	4
Radiotherapy, Cytoxan and Vincristine	4
Radiotherapy, Cytoxan	4
Radiotherapy	3
Vincristine, Cytoxan	3
No treatment	3

spread disease were treated. Three of the 17 patients died of overwhelming disease before any treatment could be instituted. Surgery was limited largely to biopsy but four had partial resection of the tumor. In addition, patients received either radiotherapy alone, radiotherapy and Cytoxan and Vincristine, radiotherapy and Cytoxan, or Vincristine and Cytoxan alone. The median survival time was not strikingly prolonged by any of these treatments. The longest survivor in this group was a patient with generalized GNB arising from the pelvis, 14 months old at the time of diagnosis, who receive radiotherapy, Cytoxan, Vincristine and died after 37 months. As previously mentioned, only one patient is alive with residual disease (six months).

The median survival time for the entire series was six months with the longest survival being 33 months for NB and 37 months for GNB. Those with the primary in the adrenal gland had the shortest median survival time (four months). Table 8.

TABLE 8

Alive— 2 patients NB (6-33 months)
Dead—21 patients
Overall median survival—6 months
median survival in adrenal tumors—4 months
median survival in extra-adrenal tumors—5 months
Longest Survival NB—33 months
GNB—37 months+

Discussion

After reviewing these data, a number of factors related to prognosis in NB became evident. These pertain not only to our experience but to treatment of this disease in general. Unlike Wilm's tumor, NB when first seen usually cannot be completely resected because of early local invasion. As shown by this series, the tumor usually can only be biopsied or partially resected. The one exception to this is intrathoracic NB or GNB which is anatomically confirmed and thus amenable to total removal. Those with the primary in the adrenal gland and those older than one year of age have the poorest prognosis. However, the final outcome of patients with NB sometimes is unpredictable because of the possibility of spontaneous regression of the tumor. Among 176 cases of spontaneous regression of human cancer, 29 or 17% were neuroblastoma[5] in which the tumor simply disappeared (25 patients) or the malignant

cells matured. This phenomena appears to be influenced by (1) patient's age as it is most common under one year of age (mean age three and a half months) and none occurred over two years old; and (2) location of the tumor as extra-abdominal tumors are more prone to regress. Regression occurred in the presence of metastases other than to bones.

Noteworthy is the finding by Beckwith and Perrin[6] of small neuroblastoma in the adrenal gland in at least one of 200 infants who died of other causes under the age of three months. These observations imply that only a minimal proportion of incipient neuroblastomas become clinically manifest.

Spontaneous remission of neuroblastoma suggests that host immunity may play an important role. Recently a factor, found in mouse submandibular gland and snake venom called nerve growth factor (NGF), has been shown to stimulate selectively the growth of sympathetic and embryonic spinal neural ganglia.[7] This protein factor is elaborated and stored in the tubular portion of the submandibular gland of the mouse which depends upon testosterone for its full development.[8] The presence of high activity of NGF in the serum of patients with neuroblastoma (increasing with tumor size)[9] and the maturation of neuroblastoma to more differentiated cell types may be related to an innate property of NB cells or to mechanisms that regulate maturation of sympathetic nerve tissue. The role of NGF, in the development of neuroblastoma, is difficult to evaluate and remains unknown. NB cells have the potential to multiply in the absence of added NGF. In addition, maturation of tumor cells in culture is not strikingly enhanced by adding NGF. Moreover when extracts of tumor cells are added to sympathetic nerve cell cultures very little stimulation of cell growth and differentiation occurs.[10]

In contrast to our series, a recent series reported from the Babies Hospital[3] showed that 60% of their patients with regional NB were alive with no evidence of disease for more than three years after having had either partial or complete tumor resection followed by postoperative radiotherapy to the tumor bed. More than 50% of the patients in most series and in our series 74% of the patients have widespread disease at the time of diagnosis. Since metastases are frequently to bone and bone marrow, treatment is limited usually to palliative radiotherapy and chemotherapy.

The use of Cytoxan and Vincristine did not increase notably the survival in our small series. Desposito and Sawitsky[11] recently reported their results using either cyclic or sequential Vincristine and Cytoxan in high or low dosage for treatment of generalized NB. Their results do not bear out the early enthusiasm show for these agents for the treatment of NB. Of 47 patients treated, only two are alive for more than 24 months with no evidence of disease. The median survival in the whole group was 37 weeks. If a response occurred, median survival was prolonged to 65 weeks. In some patients, bone marrow metastases were temporarily cleared by these agents.

It is important in our series to note that four patients died before treatment could be instituted. Three patients had widespread disease and had a median survival of five days. The other patient who had an intracerebral neuroblastoma was diagnosed at autopsy.

We believe that surgical removal of the primary tumor when feasible followed by postoperative radiotherapy to tumor bed offer the best prognosis for regional NB. The high percentage of patients with widespread disease at the time of diagnosis and the early death in four patients are largely responsible, we feel, for the poor results of this series. Improvement in survival depends upon early diagnosis and awaits more effective methods of treating patients with widespread disease.

Summary

Since 1957, 21 children with neuroblastoma (NB) and two children with ganglioneuroblastoma (GNB) were treated at the Medical College of Virginia. Of the entire group, only two patients are alive: one child with intrathoracic NB, age five months at time of diagnosis, has no evidence of disease 33 months after resection and post-operative radiotherapy. Another, age six months at the time of diagnosis, has survived for six months but has widespread disease.

In an attempt to assess the factors responsible for these unfavorable results, we have reviewed in detail the experience at the Medical College of Virginia. Six patients were under one year of age, and 14 were two years or older at diagnosis. The commonest site of the primary tumor was in the adrenal gland (52%). Other less common sites included the retroperitoneum (17%), posterior mediastinum (17%) and brain (4%). In the majority of cases (74%), the disease was already widespread at the time of initial examination. Distant metastases occurred most often in the bones (48%), bone marrow (48%), liver (48%), although at autopsy an unusually high percentage (35%) had metastases to the lungs and pleura. Those with regional disease developed metastases within 12 months of diagnosis. Only three children, all with regional disease, had complete resection of the tumor. All others had either partial resection or biopsy. Four children died before any treatment could be instituted. Fifteen of 23 patients received post-operative radiotherapy. A variety of chemotherapeutic agents including Vincristine and Cytoxan were included as part of the initial treatment program in 15 patients with distant metastasis and in four with regional disease. The median survival time for the entire group was six months with the longest survival being 33 months for NB and 37 months for GNB. Those with the primary located in the adrenal gland had the shortest median survival time (four months).

Improvement in survival rate awaits advances allowing earlier diagnosis and a more effective method of treating widely disseminated disease.

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Gout and Pseudogout Established by Polarized Light Microscopy of Synovial Fluid

Methods and Two Case Reports

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The value of synovial fluid analysis with special attention to polarized light microscopy is discussed. Illustrative case histories of two patients are presented. Both had clinically atypical arthritis and the diagnosis was clarified by identification of synovial fluid crystals.

CRYSTAL INDUCED SYNOVITIS is a condition which has inspired much investigation both in the remote and recent past. Garrod's classic paper in 1854 first linked the crystallization of uric acid with acute attacks of gouty arthritis.[1] Zitnan and Sitaj[2] described the clinical and radiographic picture of "chondrocalsinosis" in 1957, while McCarty et al.[3] further characterized this entity and called it "pseudogout" in 1962. McCarty showed that this condition was secondary to deposition of calcium pyrophosphate crystals in the joint.

The similarity of the clinical picture in these two conditions in both their acute and chronic phases is well established.[2,3] Although pseudogout commonly exhibits the roentgenographic finding of calcification of the articular cartilage, this finding may be misleading. Such calcification may be present in patients with degenerative arthritis, hypercalcemia secondary to hyperparathyroidism and vitamin D intoxication, and even in gout.[4]

Acute attacks of gout and pseudogout often present with clinical and laboratory findings similar to acute infectious arthritis, cellulitis, and rheumatoid arthritis. The chronic phase of these diseases may closely mimic rheumatoid and degenerative arthritis. The importance in obtaining an accurate diagnosis of gout or pseudogout is that the treatment of these two conditions and of the diseases they resemble is different. For example, although phenylbutazone may give relief from the symptoms of either gout or pseudogout, colchicine is relatively ineffective for pseudogout.[5] The uricosuric agents and allopurinol, of course, have no place in the management of pseudogout. Salicylates, unless given in very high doses, retain urates and a patient with gout who is misdiagnosed as having degenerative or rheumatoid arthritis might be mistreated if this therapy were used.

The purpose of this paper is to emphasize the usefulness of polarized light microscopy

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in synovial fluid analysis. Two case histories are presented for illustration.

Methods and Materials

Synovial fluid examined in both cases was obtained by aspiration of the involved knee joint using 1% Xylocaine anesthesia and a #19 needle. (Ethyl chloride spray is also a satisfactory anesthetic, especially when the joint is markedly distended with fluid.) The fresh untreated specimens were placed on clean glass slides, covered with a cover slip, and the edges sealed with fingernail polish. Sealing the cover slip prevents drying as well as excess motion of the cells and crystals, thus facilitating identification and, if desired, photography. Anticoagulants were not used to avoid any confusion due to precipitating anticoagulant crystals. Fluid was examined with a Zeiss fluorescence RA microscope, but any microscope which can be fitted with an analyzing and polarizing filter is satisfactory. A first order red plate filter was inserted between the analyzer and polarizer to facilitate interpertation of crystal birefringence, although this is not absolutely necessary. High power dry and oil immersion objectives were used. In synovial fluid with a low cell count, it is helpful to centrifuge the specimen to concentrate the cells. For further details on the theory and application of polarized light, the reader is referred to Phelps, Steele, and McCarty's excellent article.[6]

Case Histories

Case I. J. B. (UVH #32-80-78), a 78 year old white male, was admitted to the University of Virginia Hospital on December 8, 1968, for repair of bilateral inguinal herniae. He was in good general health except for minor dyspnea on exertion and genito-urinary symptoms suggestive of obstructive prostatic disease. During the five years preceding admission he had noticed occasional morning stiffness and mild arthritis manifested by transient swelling and pain of his wrists, knees, and ankles. He had had no specific treatment for this.

Physical examination on admission revealed no joint abnormalities. The hematocrit was 45%, the white cell count was 9,300/mm^3. The urine showed 6-8 white cells and 1-2 red cells with some bacteria. The serum proteins, calcium, phosphorus, glucose, and urea were all within normal limits. X-rays of his knees showed linear calcification of the menisci while the x-ray of the affected ankle showed only soft tissue swelling.

Penicillin therapy was instituted on the day of admission because of signs of bronchitis and the presence of gram positive diplococci in his sputum. One day after admission he began to complain of right ankle pain and swelling. By the day of planned surgery, three days after admission, this ankle had become quite warm, red, and swollen, and surgery was cancelled. He was seen in consultation by the Rheumatology Service. The ankle joint was aspirated, and synovial fluid analysis performed. The fluid was cloudy, slightly bloody with good viscosity and mucin clot. Culture of the fluid revealed no growth. The white blood cell count was 16,800 cells/mm.^{3}, and under the



Fig. 1. Photomicrograph of synovial fluid of patient J. B. The calcium pyrophosphate is shown with its usual oblong shape and intracellular location. (x800)

polarizing microscope crystals typical of calcium pyrophosphate were found. (Figs. 1 and 2) The patient was begun on phenylbutazone 100 mgs. t.i.d. and within 48 hours was virtually asymptomatic. Eight days after admission he underwent bilateral in-

guinal herniorrhaphies. His post-operative course was uneventful.

Case II. R. A. (UVH #60-33-02), a 67 year old Negro male, was admitted to the University of Virginia Hospital in December, 1968. He gave a history of having had



Fig. 2. Free calcium pyrophosphate crystal from synovial fluid of the same patient. The maximum size of these crystals is 10 microns. They may be blue or yellow according to the plane of refraction. (x800)

migratory arthritis for five years. Attacks of arthritis had been of sudden onset and usually persisted for two to three weeks before spontaneously subsiding. These attacks occurred two to three times a year, and he was symptom free between episodes. Usually, the arthritis was confined to the metacarpophalangeal (mcp) joints of the hands and the knees but occasionally involved the elbows and shoulders. The patient had noted joint warmth, redness, and swelling, and the attacks were accompanied by chills, fever, anorexia and weight loss. Phenylbutazone and anacin gave partial relief. The most recent arthritis attack had begun two weeks prior to admission with pain and swelling in the left hand. The right elbow had become involved several days later, then both knees became so inflamed that walking was impossible. Other complaints were fever, loss of appetite, a 15 pound weight loss, eye irritation, and urinary frequency.

On examination the patient appeared chronically ill, was febrile (39°C) and in pain. The mcp joints of both hands were non-tender but swollen and warm. There was restriction of motion of the wrists and bilateral elbow flexion contractures. The left knee was warm, swollen, and very tender, and there were slight flexion contractures of both knees. The left shoulder was also tender with decreased excursion and pain on motion. A subcutaneous nodule was noted below the left elbow on the ulnar surface of the forearm. No nodules considered to be tophi were observed.

The hematocrit was 41% and the white blood count was 7,400 cells/mm.^{3}. The VDRL was mildly reactive; sedimentation rate was 45 mm/hr.; rheumatoid factor (serum) was negative; urea was 68 mg.% (46 mg.% by the time of discharge); and uric acid was 13.2 mg.% The serum protein electrophoresis, sugar, calcium, phosphorus, and acid and alkaline phosphatase were within normal limits. Urine and blood cultures showed no growth.

Because of multiple joint involvement, increased sedimentation rate, and general clinical picture, the patient was first thought by most observers to have rheumatoid arthritis. X-rays of the hands, knees, and elbows were interpreted as showing changes compatible with rheumatoid arthritis. The second day after admission 10 ml. of slightly bloody synovial fluid was aspirated from the left knee joint. Examination of the fluid with the polarizing microscope showed typical urate crystals (Figs. 3 and 4). It is of interest that the rheumatoid factor in this synovial fluid was 2+ at a 1:20 dilution by the latex slide fixation test. The patient was started on hourly doses of colchicine (0.65 mgs./hr.). His fever fell to 37°C within 24 hours, and his joint symptoms subsided shortly therafter.

Colchicine was maintained at 0.65 mgs. q.i.d., and he did well until two weeks after admission when his temperature rose to 39°C, with the onset of left shoulder pain. This again responded to hourly treatment with colchicine; subsequently allopurinol therapy was begun. A four month follow-up revealed one further episode of right

knee and hand pain which was readily controlled with colchicine. Otherwise he has been asymptomatic.



Fig. 3. Single urate crystal from patient R. A. These crystals are usually intracellular but may occur, as this one did, free in the synovial fluid. The size varies from 2 to 10 microns. Note the needle-like structure. (x320)

Discussion

The technique of obtaining synovial fluid for analysis is relatively simple and the complications are rare. Most laboratories are now equipped with microscopes capable of polarizing light either with or without a first order red filter for further refinement. Examination under an ordinary light microscope, without polarizing filter, may lead to false positive results and/or failure to see the crystals.[7,8]

The crystals are readily identifiable in polarized light. Most of them, whether urate or calcium pyrophosphate, will be intracellular. The urate crystals as seen in figures 3 and 4 are needle-like and range from two to 10 microns in size. Although needle-like ("monoclinic") calcium pyrophosphate crystals have been described,[6] in our experience the rectangular appearance as seen in figures 1 and 2 is more common. Their color, if a first order red filter is used, is blue and/or yellow according to the plane of refraction.

The first patient exhibited a clinical picture compatible with gout, pseudogout, or infectious arthritis. Synovial fluid analysis with polarized light microscopy led to a prompt diagnosis and initiation of specific therapy. It is of interest that this patient had typical x-ray findings of chondrocalcinosis on his knee x-rays, but the affected ankle showed no cartilage calcification.

The second patient presented with deformities typical of rheumatoid arthritis. He apparently had been treated for rheumatoid arthritis for many years prior to admission to the University of Virginia Hospital, and indeed this was the diagnosis initially entertained by the house staff and attending physician. It has been emphasized by Drs. Owen, Toone, and Irby[9] that it is



Fig. 4. Another photomicrograph of the synovial fluid from patient R. A. Here, where there is a mass of clumped WBC, many urate crystals can be seen. (x320)

Histogenesis of Prostatic Carcinomas

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A classification of prostatic carcinoma is proposed, based on the site of origin.

THE EPITHELIAL ELEMENTS from which primary prostatic carcinomas must arise consist of ducts and glands. The ducts empty into the prostatic urethra. The periurethral (mucosal) and submucosal ducts are short and serve the inner part of the prostate about the urethra. Other ducts are longer and drain the intermediate and peripheral regions of the prostate. All the ducts are usually lined with transitional cells near the urethra. Most of these main or large ducts divide into shorter, small or secondary ducts which are pouchlike and often have cross-sectional areas that are larger than those of the "large" ducts that enter the urethra. The secondary ducts are lined with columnar epithelium and the prostatic acini arise directly from these. The prostatic glands proper consist of both secondary ducts and acini.

I studied surgical and autopsy specimens from approximately 300 cases of prostatic carcinoma in an attempt to determine histogenesis and develop a simple classification based on anatomical sites of origin. In approximately half the cases the tumors were so extensive or undifferentiated or pleomorphic that I could not with confidence determine the points of origin. These indeterminate cases were probably adenocarcinomas of glandular origin.

Most of the remaining tumors were adenocarcinomas that arose from acini or secondary ducts. McNeal[1] observed the same phenomenon and used the descriptive terms "alveolar-medullary" and "tubular-scirrhous" to identify typical acinar and ductular carcinomas. It was usually difficult to determine from which group of glands a carcinoma originated because most of the surgical specimens were obtained in fragments by means of transurethral surgery and the autopsy specimens were sometimes poorly oriented. However, no acinar or ductular carcinomas definitely arose from the periurethral group of glands; the evidence favored origin only from submucosal and peripheral glands.

Twelve carcinomas arose within the main ducts near the urethra. Eight were mixed transitional-adenocarcinomas observed in surgical specimens. One was a mixed carcinoma found at autopsy and the tumor involved the main ducts of all three groups of glands and also the prostatic utricle; the mucosa of the prostatic urethra also showed *in situ* transitional cell carcinoma. Three tumors were transitional cell carcinomas found at autopsy. In one case the tumor involved both the utricle and the main ducts draining the lateral lobes,[2] in one instance the exact extent of duct involvement was uncertain, and in one case the ducts of all three groups of prostatic glands were stuffed with malignant transitional cells. All 12 cases showed invasion of prostatic stroma by cancer and six were associated with metastases but none showed increased serum acid phosphatase activity. In several instances the secondary ducts showed ingrowth of tumor from the main ducts but in only the one case was there evidence of malignant disease of the urethral mucosa. My observations suggest that the malignant

potential of the epithelium of the utricle is similar to that of the large prostatic ducts.

I did not see squamous carcinomas, pure glandular tumors of the main ducts or papillary transitional cell tumors. All these rare tumors have been reported and except for squamous cancer, which is poorly documented, are included in my classification. Tumors of the urethra are also excluded. The simultaneous development of more than one histologic type of cancer probably accounts for some of the indeterminate cases.

Summary

Carcinomas of the prostate can be classified histogenetically.

A. Extensive and/or poorly differentiated adenocarcinomas for which sites of origin cannot be determined. These probably arise from prostatic glands.

B. Adenocarcinomas of prostatic glands.

1. Acinar adenocarcinoma (alveolar-medullary carcinoma[1]).
2. Adenocarcinoma of secondary ducts (tubular-scirrhous carcinoma[1]).

C. Carcinomas of primary ducts and utricle.

1. Transitional cell carcinoma.
   (a) *in situ*[3]
   (b) invasive[2,4]
   (c) papillary[5]
2. Mixed transitional-adenocarcinoma.[4]
3. Adenocarcinoma.[6]

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Water Intoxication Secondary to Oxytocin

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The antidiuretic action of oxytocin combined with the infusion of a large volume of electrolyte free fluid may lead to water intoxication, convulsions and death.

OXYTOCIN INDUCED WATER INTOXICATION, associated with grand mal convulsions, is being diagnosed with more frequency since the original studies in 1961.[1] Although the reported cases are small in number, the problem is important, as illustrated by the first reported maternal death.[2] That case followed an abortion, where relatively small amounts of Oxytocin and fluid were administered. The following case report illustrates the typical characteristics of this syndrome, the preventive measures necessary to forestall the succession of events leading to seizures, and the treatment necessary to prevent a fatal outcome whenever the syndrome occurs.

Case Report

A 28-year old white female Para 2 0 0 2 at 14 weeks gestation was admitted with an incomplete abortion by the Emergency Room physician, who started 1000 cc of 5% dextrose in water with two ampules syntocin (20 units). Admission specific gravity of the urine was 1.036. There was no evidence of sepsis or impending shock. Twelve hours later a curettage of the uterus was performed obtaining a very large amount of retained placental tissue. Subsequently, uterine bleeding was excessive and intravenous fluids with syntocin were continued. The patient's uterine bleeding had almost ceased within 24 hours following admission and her intravenous fluid intake was 5100 cc (1,000 cc Ringer's lactate and 4,100 cc 5% Dextrose in water) with eight ampules (80 units) syntocin and urinary output of 1,400 cc. At this time the patient had a grand mal convulsion, controlled with intravenous barbiturates (pentobarbital). A tentative diagnosis was made of oxytocin-induced water intoxication with convulsions and treatment immediately instituted. Serum sodium was 118 mEq/liter and serum potassium was 3.2 mEq/1. A Foley catheter was inserted to monitor the urinary output and nasal oxygen was given. The intravenous glucose with syntocin was discontinued and normal saline at a slow drip was substituted. Vital signs remained stable. Over the next two hours a diuresis of 900 cc occurred, but then the patient had a second grand mal seizure. Repeat serum sodium was 125 mEq/1 and serum potassium was 3.8 mEq/1. Over the next 10 hours urine output was 3,900 cc with total intake 800 cc normal saline with 20 mEq Kc1 and the serum sodium rose to 138 mEq/1. Within 24 hours after the convulsion the serum sodium was 144 mEq/1. The patient had amnesia of the 24 hours period, following her first convulsion. Complete neurological evaluation failed to reveal any other etiology for the hyponatremia and convulsion other than water intoxication secondary to oxytocin. The remainder of the hospital course was uneventful, and recovery was complete without sequelae.

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Discussion

Early in the use of the extracts of the posterior pituitary lobe as uterotonic agents, independent antidiuretic activity was noted to be due to the oxytocin fraction.[3] Abdul-Karim and Assali described the renal hemodynamics involved in the use of oxytocic agents and postulated the mechanism of action to be active reabsorption of water by the distal tubules.[1] These facts are now well confirmed but the occurrence of water intoxication is not recognized as frequently as it occurs. Previous warnings on the use of oxytocin have stressed the hazards of uterine tetany or rupture. However, the oxytocin preparations now in clinical use have an antidiuretic property of significant importance. In addition, pregnant women are prone to convulsions more easily from metabolic disturbance than when they are not pregnant.[3] Thus, the use of large volumes of electrolyte-free fluid with oxytocin therapy can result in water intoxication and precipitate convulsion in an otherwise normal pregnant individual.

Earlier reported cases of this problem were associated with high doses of oxytocins given with a large volume of hypotonic fluid over a short period of time in the immediate postpartum period (usually to control uterine atony and hemorrhage). In contrast, high concentrations of intravenous oxytocins had been established as an effective and safe method for termination of mid-trimester pregnancy. However, a subsequent report illustrated oxytocin induced water intoxication with convulsion following an early abortion using large doses of syntocin.[4] A more recent report presented the first maternal death which followed an abortion.[2] Even more significant in that case was the relatively small amounts of oxytocin (60 units) and fluid (4000 cc 5% dextrose in water) administered. The case presented in this report also had a small amount of syntocin (80 units) and only 4100 cc of hypotonic fluid. In addition, this patient received 1000 cc of Ringer's lactate and the total fluid was given over a time period of 24 hours.

From these reports, it must be realized that each pregnant patient is a potential candidate to develop this syndrome. Thus, preventive measures should be undertaken in every pregnant patient to avoid this potentially fatal complication. Upon the admission of a patient with an incomplete abortion to the Emergency Room, Ringer's lactate rather than dextrose in water should be started intravenously by the admitting physician. Careful monitoring of the amount of intravenous fluids and of pitocin given to, and the urinary output of, the patient is essential to prevent a hypotonic situation. These monitoring principles also apply to the management of the patient with postpartum hemorrhage.

However, once the syndrome of water intoxication with grand mal seizures develops in a patient, accurate diagnosis and rapid therapy are necessary to prevent a possible fatal outcome. The basic principle in treatment is to discontinue the administration of additional fluids and oxytocin. The administration of hypertonic saline will increase the plasma osmolarity which will aid recovery by improving renal clearance of water.[4] A large volume of fluid as a vehicle for the salt should be avoided, as time alone will allow excretion of the excess water accumulated after destruction of the administered hormone has taken place. Intravenous mannitol, an osmotic diuretic agent used for relief of cerebral edema, is dangerous in this syndrome since a further sudden increase in intravascular fluids may lead to acute pulmonary edema. Also rapid diuresis induced by mannitol, in the presence of an already low serum sodium level, may potentiate this depletion and precipitate a serious hyponatremia. Thus, mannitol should be avoided in these patients with water intoxication and grand mal convulsions.[4]

Summary

A case of oxytocin induced water intoxication, with grand mal convulsions, following an abortion has been presented. The characteristics of the syndrome are illustrated, the preventive measures discussed, and the treatment necessary to prevent a fatal outcome is outlined.

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Addendum:

The views expressed herein are those of the author and do not necessarily reflect the views of the U.S. Air Force or the Department of Defense.

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Let's Reminisce!

Female Doctors in Virginia Politics.

A correspondent, for whose opinion we entertain high regard, writes us as if we had urged (February editorial) the education of females as doctors, etc. How he got such a notion we do not know, for we avoided the discussion as to whether women ought or ought not to be educated and graduated. We simply stated facts which none deny—that some women can make good doctors, that they are being graduated by Southern colleges, that they are proving themselves capable, and *without advocating* their settling in the South, we only pointed out that, in the very near future, they will be here. In view of this inevitable, we asked what course the profession of the South will pursue with reference to receiving reputable qualified female physicians who may locate in their communities? We added the opinion, in which we are confirmed by personal letters from some who occupy advanced positions in the Southern profession, that "as the *vast majority* of the observant and conservative element of the profession", properly qualified female doctors will receive professional recognition "in each instance as she comes." To construe this statement of facts as *advising* the education of our sisters and daughters for professional duties is "jumping at a conclusion". We would suggest the re-reading of that editorial to any who may be "surprised" or "feel regret" at the position (?) taken.

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Treatment of the Short Intestinal Syndrome by the Reverse Loop Method

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Reversal of a short segment of small intestine has been found useful in controlling the intolerable diarrhea suffered by this patient.

MRS. D. W., a sixty year old white female, presented with the symptom of constant diarrhea, with at times 20 to 25 watery stools daily, resulting apparently from a short bowel syndrome. She was treated successfully by the reversal of a ten centimeter loop of small bowel.

The history indicates the patient had had a ruptured appendix at the age of 17 or 18. She had had in 1929 and 1930 two pelvic operations, including a partial hysterectomy. In 1956 she had an exploratory laparotomy, the details of which are not available. On September 4, 1964, she had a resection of the sigmoid colon for rather marked diverticulosis, at which time there were found to be extensive peritoneal adhesions involving the small bowel.

Following this operation, partial intestinal obstruction occurred and a G.I. series indicated a constriction in the jejunum approximately two feet below the duodenum. Reoperation on September 21, 1964, revealed innumerable dense adhesions in the right lower quadrant involving the terminal ileum but also at a level of two or three feet from the ligament of Treitz, a loop of bowel adherent to the posterior abdominal wall near the site of the recent operation. In this area the adhesions were light and friable. The adhesions were released and the patient made a satisfactory recovery.

On December 10, 1965, due to recurrent intestinal obstruction, she was again operated upon, at which time further adhesions involving the small bowel were released. On January 6, 1966, another operation, due to intestinal obstruction of the small bowel, was done. At this time approximately six to eight feet of small bowel was removed, leaving what was estimated to be between three and four and a half feet of small bowel.

Subsequent to this operation she has had persistent diarrhea. Three years of treatment on a dietary regimen, steroids, anticholenergics and intestinal relaxants failed to afford any improvement. The patient's nutrition remained adequate to good throughout.

In the period shortly preceding her present admission, she developed a great deal of anal and perianal irritation, adding to her unhappy state. Somewhat in desperation and with a strong endorsement of her family physician, a transverse colostomy was done. This was done for several reasons; first, it was hoped that a period of rest for the distal colon might be of benefit; second, it certainly would afford an opportunity for the severe perianal dermatitis to subside; third, that perhaps with a dispos-

able plastic bag the colostomy could be better tolerated.

The colostomy was maintained for approximately seven weeks, from 5/21/69 to 7/11/69, and intensive medical treatment with diet and drugs again instituted while the patient was retained in the hospital. While maintained on intravenous fluids, with little or nothing by mouth, the patient did well but the reinstitution of oral feedings precipitated the diarrhea to its former level with marked and severe excoriation of the abdominal skin around the colostomy.

At this stage it was suggested by her internist, Dr. Robert Duley, that perhaps a reverse loop would be of benefit. A search of the literature and consultation with surgical confreres revealed that little use had been made to date of a reverse loop in this type of syndrome, that is, the short intestinal type. It had been used more extensively in association with the problem of diarrhea following gastrectomies. Four cases in which a trial had been made with some improvement were found in the literature. Consequently, it was thought wise to give this a trial.

On July 11, 1969, a segment of ileum, thought to be about the mid portion of the remaining small bowel, was released of rather extensive adhesions and a ten centimeter segment reversed. The operation was accomplished with little difficulty and no problem whatever was encountered with the mesentery in reversing the loop. An exact ten centimeter segment was severed and reanastomosed. When the anastomosis was finished the reversed segment measured eight and one half centimeters. The colostomy was also closed.

Her post operative course was good. There were some colicky abdominal pains and a rather gradual decrease in the diarrhea. However, following her discharge from the hospital and convalescence at home, she began to have formed stools and no more than perhaps an average of five per day. Under stress on two occasions, namely, extensive dental extractions on one and an occipital neuritis on another, she had an increase in the bowel movements of up to ten a day but when the stress was relieved on each of these occasions the bowel function returned to its more or less basic level of approximately five fairly well formed stools daily.

While this type of therapy, the reversal of a short segment of small bowel, to control diarrhea resulting from the short intestinal syndrome has had only limited trial to date, in this case, it has proved to be of great benefit in relieving an "offensive" condition, for both the patient and her family.

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Lipoma of the Kidney

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A huge lipoma of the kidney was an incidental finding at autopsy. X-ray studies during life could have demonstrated this mass. Attention is directed to the differential diagnosis of renal cortical masses.

A 78-YEAR-OLD NEGRO FEMALE was admitted to the hospital because of the sudden onset of headache followed by stupor. She had been hypertensive in the past. Physical examination revealed severe hypertension, nuchal rigidity and hyperactive deep reflexes. No organs or masses were palpable in the abdomen.

Laboratory studies revealed normal hematological values. The urine revealed 1+ albumin, 12-18 WBC and 2-4 RBC per high power field. Blood chemistries revealed an elevated blood sugar and urea nitrogen. A spinal tap was performed and showed a grossly bloody fluid under increased pressure.

Her hospital course was one of gradual progression to coma and she expired on the sixth hospital day.

An autopsy was obtained and the pertinent findings were cardiomegaly (450 grams), slight generalized atherosclerosis, arteriolonephrosclerosis and bilateral pneumonitis. The adrenals were normal. The brain revealed a 1 cm. aneurysm of the posterior communicating artery with massive subarachnoid hemorrhage. A huge yellowish mass was noted arising from the cortex of the left kidney. This mass measured 18 cm. in greatest length and weighed approximately 400 grams (Fig. 1). It extended into the perirenal fat. Slight distortion of the renal pelvis was present. Histologically, the mass was composed of adult fat cells with some fibrous septae and prominent vessels. No elements other than fat and fibrous tissue were observed (Figs. 2 & 3).



Fig. 1. Left Kidney Showing Lipoma.

Discussion

Most reports of lipoma of the kidney describe them as small and clinically unapparent.[1,2,4] Some obtain fairly large size.[3] The lipoma in question was an incidental finding at autopsy and had caused no symptoms.

This huge benign tumor could have given much confusion with a renal cortical mass of malignant nature had further studies been undertaken during life. The distortion of the renal pelvis and the size of the mass could have caused radiographic suspicion of malignancy. Generally, renal cortical masses are benign tumors such as lipoma, fibroma or adenoma, cysts, or malignant tumors such as Wilm's tumor or adenocarcinoma.

Summary

A huge lipoma of the kidney was an incidental finding at autopsy. X-ray studies during life could have demonstrated this mass. Attention is directed to the differential diagnosis of renal cortical masses.



Fig. 2. Lipoma (H & E stain X 100)



Fig. 3. Lipoma (H & E stain X 450)

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Taxation of Medical Journal Advertising Revenue

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The present policy of the Internal Revenue Service is to tax the revenue from advertising in medical journals. The background needed to understand how this policy was arrived at is presented.

THE TAXING POLICY of the United States is determined by Congress and effectuated by the Executive Branch through the Department of the Treasury and its Internal Revenue Service. One of the consistent policies followed by Congress over the years has been to grant exemption from certain types of tax for organizations which engage in specified types of religious, charitable, educational, scientific, and similar "non-profit" functions.[1] Contributions to such organizations are also favored, by allowing such as deductions on personal and corporate income taxes.[2] The theory is that the cause of public progress is better served by thus encouraging private charitable and educational enterprises than by having the government provide similar services. In general the system has worked very well, and the civic value of nonprofit organizations such as the major charities, educational foundations, and professional associations is undeniable.

The problems arise from the borderline cases which verge on being an abuse of the exemption. Tax-exempt organizations are especially vulnerable because of the general public indignation at the special treatment they receive under the general tax law, not to mention the often rather flagrant, self-serving schemes which have been the focus of public outcry and investigation into the "abuses" of foundations.[3]

One small segment of this general field concerns the "business" activities of such tax-exempt organizations. Included therein is the issue about which many professional societies are currently exercised, namely, whether the revenue received by a tax-exempt organization's magazine or periodical for its publication of commercial advertising should be considered as "unrelated business income" and thereby be taxed. The question, to be understandable, must be approached through its historical development. It cannot be understood by reference only to outcries against the tax-collector.[4]

Background

In the Revenue Act of 1950, Congress first created the concept of taxing the "unrelated business income" of a tax-exempt organization. It did this because of the acquisition by tax-exempt New York University, of the C. F. Mueller macaroni business and its major share of the commercial macaroni market.[5] The Congressional rationale was that such obviously commercial operations had no place being exempted from the usual corporate taxation just because the University happened to be the owner, that the macaroni business was not related to the reasons that the University was granted tax exemption, and that it was patently anti-competitive and unfair to let this non-taxed macaroni corporation compete in the marketplace with the other,

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taxed, macaroni manufacturers. Thus came into being § 511-513 of the Internal Revenue Code, which imposed the usual income taxes on the "unrelated business income" of such exempt organizations, and defined such an "unrelated trade or business" as

> "any trade or business the conduct of which is not substantially related (aside from the need of such organization for income or funds or the use it makes of the profits derived) to the exercise or performance by such organization of its charitable, educational, or other purpose or function constituting the basis for its exemption. . ." [6]

Thus, the conduct of a commercial business was not related to the reason that N.Y.U. was granted tax exemption, and therefore the macaroni income was thereafter taxable as if it were an ordinary business. Many cases over the years since 1950 have turned on this question of whether or not a business was "substantially related" to the purposes of the exempt organization.

The IRS publishes Regulations which try to explain and supplement the skeletal language of the Congressionally passed Internal Revenue Code. These Regulations are the "official" Treasury Department interpretation of what it thinks Congress meant in the Code, and what the IRS will seek to tax. Such Regulations were issued subsequent to the 1950 Code, and they were reissued after the General Code re-enactment in 1954. They have been extensively interpreted and litigated over the years by cases and IRS Revenue Rulings concerning specific examples of what is thought to fall within or without the reach of the Statute. Some the organization has won (income from a hospital gift shop and parking lot are related to the exempt hospital's basic purpose);[7,8] some the IRS has won (cinderblock plant owned by a college is not related).[9] There has been a fairly constant stream of situations demanding decision.

Application to Advertising

The present problem developed in the mid-1960's when the IRS began to implement further its concept of "unrelated business income". It specifically considered the question of the revenue received by a tax-exempt organization from the publication of advertising in its journal. The impetus is thought to have come from the commercial (and taxed) publishers, who were outraged at the non-taxed status of such widely circulated periodicals as *The Nation's Business* and the *National Geographic Magazine*, with their handsome advertising pages. It is estimated that about 700 journals having gross annual advertising receipts of about $110 million are involved, including the *Journal of the A.M.A.* (estimated gross annual advertising revenue $10 million), *The National Geographic Magazine* ($6 million), *The Nation's Business* ($4 million),[10] *The American Bar Association Journal*, and, of course, *The Virginia Medical Monthly* (stated 1968 fiscal year advertising revenue $32,217.48).[11] The estimated tax revenue sought to be obtained is stated to be about $25 million.[12]

Contrary to the beliefs of some taxpayers, the IRS does not by edict issue new Regulations, but formulates them after varying periods of study, then holds hearings on the proposed new Regulations following notice published to interested parties. In April, 1967, such notice was formally published,[13] and three days of hearing were held in July, 1967.[14,15] The final, new Regulations were issued in December, 1967.[16] As finally published, the new Regulations specifically apply to the advertising revenues of the periodicals published by tax-exempt organizations.[17,18]

Validity of Tax

The key words in the Statute on which turns the taxability of the organization's business income are:

1—"trade or business"

2—"regularly carried on"

3—"not substantially related . . . to the . . . purpose or function constituting the basis for its exemption." [19]

As far as journal advertising is concerned, it is believed that all three criteria apply. The procurement and publication of commercial advertising is quite analogous to that conducted by other commercial magazine businesses, the journals are obviously published regularly, and the advertising copy is not essential nor "substantially related" to the basic exempt purpose of the organization. The IRS has flatly ruled that such advertising is unrelated to the journals' exempt purpose.[20]

The legal commentators are not quite so certain that these Regulations as now written will be able to withstand attack when a test case comes up.[21,22,23,24] One argument is that such advertising revenues were never within the Congressional intent in 1950, nor within the contemplation of the cases and Revenue Rulings since then. In short, that the new Regulations represent a radical reversal of policy, so drastic that it should only be done by Congressional enactment. The rejoinder, of course, is that nowhere does the Code limit itself to macaroni factories, but instead is couched in broad, inclusive language, with no indication that Congress, had the advertising issue come up in 1950, would not have also specifically taken aim at it.

Another weakness in the Service's position is its attempt to state flatly that the advertising is not related to the magazine's basic purpose. The medical journals have especially emphasized this approach, pointing out the educational value of the drug advertisements to the physician readers.[25] The Service seems highly unmoved by such rationalizations.

A third weakness of the Regulations is their demand that the heretofore unified operations of the magazine be split for accounting purposes into separate "editorial" and "advertising" "activities." [26] It is felt that this separation into disparate "activities" is inconsistent with established publishing practice and prior Code interpretations. There are also minor inconsistencies within the Regulations as far as allocations of expenses and deductions are concerned.[27] It would seem, however, that this should not be an insurmountable accounting problem.[28]

It is obvious that these Regulations are going to be challenged. The *New England Journal of Medicine* is said to have embarked on such a course with its 1968 return.[29] A series of court defeats for the IRS would probably result ultimately in its abandonment of attempts to tax these revenues, and of course would apply to all the periodicals similarly situated.

Another avenue of attack has been the attempt to get special relieving legislation from Congress. This has thus far been unsuccessful despite castigations on the Commissioner of Internal Revenue for his "zeal to crush the financial stability of such organizations as the Boy Scouts." [30] The Senate debated the advisability of a special relief amendment from the floor in September, 1968, and defeated it, deferring to the Senate Finance and the House Ways and Means Committees as the appropriate forums for the proper initial consideration of tax proposals, and citing the extensive Treasury Department background of the new Regulations.[31] Both Virginia senators were recorded as present at the vote, one voting with the majority to defer action on the amendment, the other in the opposite. Numerous other bills have been introduced.[32] With the extensive hearings underway in the House Ways and Means Committee on general tax reform, this issue has been discussed, and interested parties have been heard, including the American Medical Association.[33] It is possible but not probable that legislative revision of the pertinent sections of the Code may result in the desired relief as part of the current efforts to achieve overall tax reform in the interest of tax equalization.

Operation of Tax

In the meantime, the organization must report its "unrelated business income", (above a statutory deduction of $1,000).[34,35] This is computed by taking as separate entities the "editorial" and the "advertising" portions of the periodical's revenues and expenses. The "editorial" expenses must be offset by subscription and other related income; for most professional organizations this would probably result in a deficit. If the organization includes a subscription to the journal as part of its annual dues, a portion of the dues must be allocated to the "subscription cost" of the periodical. Next, the advertising revenue must be totalled and offset against the allocable portions of the total expenses related to the advertising; this would probably result in net profit. Finally, the remaining "editorial deficit" can be offset against the remaining "advertising profits", leaving, perhaps, an excess, which is reportable and taxable at the usual corporate rate (22% on the first $25,000, 48% on the net above $25,000, exclusive of the recent surtax.[36] For the great majority of low-circulation periodicals it is apparent that there would be little if any remaining income to tax, and if it were less than $25,000 it would only be taxed at the 22% basic corporate rate. The major nationally circulated periodicals are the ones which will feel the tax bite. They are the ones at which the Treasury is primarily aiming, and the ones best equipped to survive it.

Conclusion

The new Internal Revenue Service Regulations concerning the taxability of the unrelated business income from journal advertising revenues of a tax-exempt organization have been developed in response to a seeming inequity in the tax treatment of commercial as opposed to "nonprofit" publishing enterprises. The new Regulations are surely going to be contested and may be vulnerable from several aspects. Proper litigation in the courts and orderly consideration of a Tax Bill in the Congress can result in relief of an inequitable tax, if such it be.

Addendum

The Tax Reform Act of 1969 amends section 513 of the Code so as specifically to include net advertising revenue within the definition of "unrelated business income".[37] This gives statutory recognition to the Service's position, and seems to put an end to the discussion for the present.

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Clinicopathological Conference . . . .

Mesenteric Venous Thrombosis, Splenomegaly, and Thrombocytosis

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Clinical History

Dr. Mohler: This is a problem of a 49-year-old man who had an elevated white count and platelet count, enlarged spleen, and had two episodes of small bowel infarction. He had an acute myocardial infarction at the early age of 36 but apparently recovered uneventfully, and had no other signs of vascular disease or hypertension then. His red count during that episode of myocardial infarction was 4.9 million/mm^3. In 1963, when he was 43 years of age, he had acute pyelonephritis involving his left kidney. An IVP was done then which was normal, and his hematocrit on that occasion was 46%. The story of his last and fatal problem began the first part of December in 1969, about a month before he died, when he developed pain in the left anterior chest and left upper quadrant. The pain was pleuritic in nature and was accompanied by non-bloody diarrhea for two days. He was admitted to another hospital on December 5, where he was noted to be in pain, was pale and perspiring and had spasm of the abdominal and back muscles. His spleen was palpable. Laboratory studies showed a normal urine, a trace of blood in the stool, hematocrit of 44%, reticulocytes 2.2%; white count was 17,000/mm^3, with a fairly normal differential. Electrocardiogram showed a few premature ventricular contractions and some flat ST-T waves. He was referred here on December 17th, 19 days before he died, because he was having persistent pain, fever, and splenomegaly. The physical examination showed a blood pressure of 128/76, an elevated left diaphragm, and a moderately tender spleen which was felt 2 cm. below the left costal margin. His hematocrit was 41%, white count 15,000, with 83 segs., 13 lymphs., and 4 monocytes. Reticulocytes were 1.4% and 2.7%. He had two platelet counts done: one was 851,000/mm^3 and another was 781,000/mm^3. There was only a slight trace of blood in the stool. The leukocyte alkaline phosphatase was elevated at 251. EKG was normal. A bone marrow touch prep. was said to be normally cellular, was normoblastic, and had an M:E ratio of 5.6:1. The megakaryocytes appeared to be normal, but bone marrow biopsy sections were thought to show an increase in megakaryocytes. He had a splenic scan, which showed that the spleen indeed was enlarged, and there was rather poor uptake, but no definite areas of infarction could be discerned. Because he was getting worse he was explored on December 22, two weeks before he died, and 105 cm. of gangrenous small bowel were resected. Dr. Alrich, who performed the

surgery, thought that the infarction was due to venous rather than arterial occlusion. He did fairly well until December 30th, when he was explored again because of abdominal pain, distention and tenderness. Another 20 cm. of gangrenous ileum were resected. Sections showed infarction with viability of the distal end. Peritoneal cultures then grew out *E. coli;* this was treated with cephalothin and kanamycin. After the second operation he became progressively more oliguric, with a rise in his urea to 288 mg.%. He had hypoactive bowel sounds with a soft abdomen. He then became progressively more obtunded, and on January 5th he became hypotensive and died.

So we have the problem here of a man who had abdominal catastrophe with infarcted bowel, and had something going on with his hematologic system. It is not quite clear how the two are related. I've asked Dr. Wheby if he would discuss this problem.

Clinical Discussion

Dr. Wheby: I would like to start off by calling on Dr. Alrich to tell us just a little bit about how certain he could be, and how he was able to distinguish arterial from venous, or in this case venous from arterial occlusion and infarction. Dr. Alrich, could you help us out on that point?

Dr. Alrich: Small bowel infarction is almost always due to arterial obstruction, but if this lasts for any length of time, because of sludging in the venous return, there may be thrombosis in the veins also. This is also true for pure arterial disease that you see in an extremity or with an embolization to the mesenteric artery. The second thing that comes to mind is that in infarcted bowel secondary to compromise of the blood supply by such things as torsion, the first thing that happens is that venous return is impaired. When the torsion is corrected the viability of the bowel may return if the process of thrombosis in the veins has not progressed to the point that it will eventuate in further interference with blood supply to the bowel. Now the situation in which you have purely venous thrombosis and normal-appearing arterial supply is the exception, and this case seems to me to fit into this category. How do you determine it? You see that the veins have clots in them; you see that the arteries still have pulsation in them, and under these circumstances, without torsion, one comes to the simple conclusion that the specific lesion in this instance is thrombosis within the venous system, and it has not eventuated from interference primarily with the arterial supply to the bowel. Under these circumstances, of course, one does not worry about getting arterial supply to the bowel. The segment of involved bowel is removed, and if this process does not develop in other areas then the patient should have a good prognosis.

Dr. Wheby: Have you encountered purely mesenteric venous thrombosis previously?

Dr. Alrich: We've encountered it in one patient at post mortem who was not operated on, in which the etiology as far as I know has never been determined. We have seen it in two or three other patients in this institution in years gone by, and we have suspected what presumably is an underlying abnormality in coagulation.

Dr. Wheby: Well, it seems to be quite an unusual occurrence to have mesenteric venous thrombosis, at least in your experience. I think it's important to have that information, and I thank Dr. Alrich for it.

Primary mesenteric venous thrombosis is a very rare condition. There are a few reports in the literature, and I think that it probably includes a number of etiologies. The symptomatic pattern that this man followed does fall into what is described in the literature with mesenteric venous thrombosis. It can be a very difficult situation diagnostically. The signs and symptoms fall into several categories. Warren and Eberhardt[1] describe a prodrome in

which the patient may have a number of manifestations. He may have evidence of phlebitis elsewhere in the body, perhaps in the leg. There may be vague abdominal discomfort of episodic nature, somewhat similar to what this man had, although he started out with rather severe pain. The pain may be rather diffuse and intermittent; it may last several days or weeks. During the time, if the prodrome lasts 4-5-6 days, constipation may occur, but eventually they do get diarrhea, and as Dr. Alrich pointed out to me in an earlier discussion, the explanation is probably related to the fact that with venous thrombosis one gets edema, a lot of stasis in the gut, and transudation of fluid across the bowel, and loading-up of the bowel with fluid, and thus at times a watery diarrhea. The patient that he mentioned, discovered at autopsy, *had* a watery diarrhea of quite severe nature before she died. The patient with mesenteric venous occlusion may enter an acute phase with the picture of an acute abdomen. At this point the picture may look very much like intestinal obstruction. The pain again, though, may be very intense, but again may be intermittent, very much like the patient we are discussing now. The physical examination is also somewhat confusing, in that at times the findings on abdominal examination are not in keeping with what seems to be the severity of the situation. There may be generalized tenderness, but often there is not rigidity, and there is often not rebound, though eventually, of course, with infarction they develop signs of peritonitis. So, I think that the symptoms and findings that have been described today for this patient are in keeping with what is written about in the literature. Warren and Eberhardt mention five categories of mesenteric venous thrombosis based upon the underlying disease. The first is *infection* in the abdomen, including peritonitis, pelvic abscess, and appendicitis. This was much more common in the days before antibiotics, and I think that certainly this still could be a problem, but fortunately it's fairly unusual. A second category is trauma to the mesenteric veins. We have no history here for either of these. He had been on a hunting trip, but there is nothing in the history, and he was certainly capable of giving a history, to suggest either trauma or infection in the abdomen. A third underlying situation is referred to as *mechanical*. This usually involves portal stasis, for example, cirrhosis of the liver with portal venous obstruction or at times a congenital deformity of the portal vein which may result in back pressure and low flow and lead to a progression of the thrombus in a retrograde fashion. Again, we have not even suggestive evidence. We have no history of alcoholism. The liver function studies show a slightly elevated BSP, but the patient had fever, and fever may increase BSP retention. The alkaline phosphatase was slightly elevated, but I don't believe that I would want to bring in the possibility of cirrhosis here. Dr. Alrich, when you opened the abdomen, did you have a chance to pay attention to what the liver looked like?

Dr. Alrich: I don't believe we paid much attention to it.

Dr. Wheby: I imagine not, with the bowel being in such a state. I would say that cirrhosis of the liver is not a very likely possibility. Volvulus has already been mentioned and excluded. At times, certainly, malignant tumors may obstruct the portal vein and cause retrograde mesenteric thrombosis. Again, I don't believe that we have any evidence for this particular problem. A fourth etiologic category is *hematogenous,* meaning that there is something wrong with the blood, causing some alteration in the clotting mechanism which would make the patient susceptible to venous thrombosis. I'll have more to say about this shortly. A fifth category is referred to as *agnogenic mesenteric venous thrombosis.* This obviously would be a group of patients with mesenteric venous thrombosis without any

underlying disorder which can be discovered either at the time of surgery or in some cases at autopsy. Now obviously some of these could fall into the hematogenous one. There can be some hypercoagulable state which would not be discernible at the time of autopsy, but could only be brought out by clotting studies, and I think that we have great difficulty in finding and detecting what we refer to as a hypercoagulable state. In this agnogenic group, these authors describe twelve patients without any underlying disorder. Only one had a platelet count recorded and that was normal. They had one family with four brothers affected by whatever this condition is, and after the first two brothers had been affected one of the brothers, who was a doctor, went into a hospital in New York with abdominal pain and told them that he was certain that he had mesenteric venous thrombosis because two of his brothers had it, and sure enough at operation he had it. His other brother did the very same thing; developed abdominal pain, made the diagnosis on himself, and it was confirmed at the time of operation. So, this, although a rare situation, does occur, and we may not have any explanation for it. Now, in our patient, however, there are some clues as to possible and probable underlying blood dyscrasia. We already have heard from Dr. Mohler and in the protocol that the platelet count was quite elevated—851,000/mm^3 on the first count. I looked at the peripheral smear, and there is no question that the platelet count is greatly increased. It's hard to be certain just exactly what it is, but I'm sure that this is not an overestimation, at least by my evaluation of the peripheral smear. So we have a thrombocytosis. Well, this is not a specific finding. A thrombocytosis may be simply a reaction, so-called reactive thrombocytosis, and it can be related to a number of underlying processes. For example, certain inflammatory diseases, including inflammatory diseases of the intestine, such as regional enteritis, ulcerative colitis—can result in a thrombocytosis, although usually not to this level. Certain malignant diseases are associated with a reactive thrombocytosis. We commonly see this with Hodgkin's disease, but it can occur in any malignancy. We know that people with malignant disease do have a propensity for intravascular clotting, and I'm referring specifically to venous thrombosis. We don't have evidence for malignancy at this point. Sarcoidosis at times is associated with thrombocytosis. This 850,000/mm^3 would be a little high, but there are a number of conditions that may result in a reactive thrombocytosis. I don't know the mechanism of this; I don't believe anyone does. Experimentally, the regulation of platelet production is in some way related to the number of circulation platelets. Now, what is there about malignancy or inflammation that would change this, that would alter the usual regulatory mechanisms for platelet production? I think it is not understood. We know that other parts of the clotting scheme may be affected. Factor 8 and fibrinogen are increased with inflammatory states. Without clear evidence for an underlying disease that might cause reactive thrombocytosis, what about a problem involving the bone marrow? There are certain situations that I will describe in a little more detail shortly, but, just briefly, one can see thrombocytosis in, for example, chronic granulocytic leukemia. He doesn't have evidence for this. You can see it as a manifestation of a generalized marrow disorder, such as polycythemia vera, for which there is no evidence. One can see thrombocytosis as an isolated proliferative disease of the marrow, so-called idiopathic thrombocytosis or essential thrombocytosis. I think that we need a little help here. We've got the evidence of enlarged spleen. This may be associated with a marrow proliferative disorder, but an enlarged spleen may be a result of the splenic vein thrombosis which probably accompanied the mesenteric venous thrombosis. I think it's very important for us to take a

good look at the x-rays and see if perhaps the splenomegaly preceded this acute illness. I'd like to ask Dr. Seale to show the films at this point.

Dr. Seale: One of the earlier chest films from his admission at the other hospital shows an area of reaction or perhaps atelectasis, interestingly enough, on the right side, with very little on the left side. That could, indeed, have been perhaps the result of infarction, but it is on the right side. Now, at the time the patient was seen here, this had cleared on the right, but there is an early effusion and perhaps a little parenchymal reaction on the left side. Several days later in his course here, actually postoperatively, the films show the gradual development of a very large pleural effusion on the left side. There is a small effusion on the right. This appearance of the chest is very frequently seen with some problem below the diaphragm, such as abscess or splenic infarction. There is no really good evidence for an active pulmonary infiltrate. A scout film of the abdomen taken on the day of his initial surgery effectively ruled out an obstruction lesion. There seems to be a soft tissue or at least fluid density in the central portion of the abdomen, with little evidence of peritoneal fluid. On decubitus film the gas in the colon in fact fills the left colon right down practically to the rectum. I think this very effectively rules out obstruction. However, again, there is this central mass of fluid with little evidence of free fluid in the peritoneal cavity. This obviously represents the fluid-filled loops of small bowel involved in venous thrombosis. Now, I'll come down to the question that Dr. Wheby asked. An abdominal film that goes back to 1956 shows in the left upper quadrant a pretty good-sized spleen although not actually enlarged. But seven years ago, in 1963, abdominal films show a distinctly enlarged spleen. I don't think there is any reasonable question that the spleen was quite large in 1963, and one of many films he had in 1969 showed a tremendously enlarged spleen. So, in answer to your question, this splenic enlargement probably dated from 1956, but certainly from 1963.

Dr. Wheby: Well, I would like to use the evidence of enlarged spleen dating back at least until 1963, to indicate that there was a process going on which apparently was not causing any symptoms, but which did result in the final illness, that is, mesenteric venous occlusion. I'm putting this man into what we refer to as a myeloproliferative disorder. Thrombocytosis may be seen, as I've already mentioned, with any of these. This is a unifying type of approach to diseases of the bone marrow that Dr. Dameshek was the main proponent of, and as one thinks of the various elements in the bone marrow, any of them may proliferate singly or together. The myelocytic proliferative disease we will refer to as chronic granulocytic leukemia, which I've already mentioned, and I don't believe that he has this. The erythrocytic proliferative disease as an isolated event is pretty unusual if we leave out the so-called erythroleukemia and just think about the conditions that could apply here. Polycythemia vera usually does not involve just the red cells; it involves all of the elements. I don't think, however, that we can say that there is any evidence in this man for polycythemia vera. Megakaryocytic proliferative disease by itself is very unusual. This would be what is described as idiopathic or essential thrombocythemia. There is an extremely rare condition referred to as megakaryocytic leukemia, but in this particular situation I think that what we're dealing with is a proliferative disease of megakaryocytes resulting in increased production of platelets. If the fibrocytes in the bone marrow proliferate also, then one may develop what is referred to as myelofibrosis, and this may be combined with proliferation of all of these, and it would make up with so-called disease of agnogenic myeloid metaplasia or myeloid metaplasia with myelofibrosis. Again, I don't believe that we

will find this. I looked at the bone marrow biopsy. There does not seem to be any fibrosis, at least in the section that I saw. The most striking finding in the bone marrow biopsy was a fairly cellular bone marrow with a great amount of megakaryocytes and very active appearing megakaryocytes with multiple segments to the nuclei. In so-called idiopathic thrombocytosis the platelet count is usually higher than in this case, but it could be anywhere from 700,000 to several million; the white count may vary up to 10-25,000, usually without immature granulocytes in the peripheral blood. These people have an enlarged spleen. They may go on for quite a while without any difficulty. The difficulties that they develop may include either bleeding or thrombotic problems. The bleeding part is probably more common. It is sort of a paradox that one would have too many platelets and yet show up as a bleeding disorder, but the two or three patients that I've seen have had bleeding gums, bleeding from the mucous membranes, and the one patient that I saw most recently was a young girl who presented with an abruptio placentae and had bleeding gums, an enlarged spleen, and a very high platelet count. So, I think that this is where I will try to bring it to an end. I think that this man, on the basis of the high platelet count, the fairly long duration of splenomegaly, and the elevated white count, has idiopathic thrombocytosis, that this led to a susceptibility to venous thrombosis, that he did in fact have mesenteric venous thrombosis with infarction of the bowel, that this resulted ultimately in peritonitis and in his death. I don't believe that there is evidence to bring in any other underlying disease.

Dr. Mohler: Dr. Wheby, in cases that you saw of primary thrombocythemia, as you followed them over a period of years, did they continue to stay this way, or did they turn into polycythemia vera, or leukemia, or what?

Dr. Wheby: I'm not sure what happened. I've seen people have segments of their disease. One girl I saw at Walter Reed was about 25 years old and had had a mesenteric arterial thrombosis. She was still going on with just the thrombocytosis. I saw a girl in Puerto Rico who was doing well on busulfan treatment to keep her platelets down, and I had no long-term follow-up.

Dr. Mohler: Dr. Leavell also followed this patient during his time in the hospital on the last admission, and I'd be interested in comments you have about it.

Dr. Leavell: This patient was quite a problem all the time he was here. His doctor sent him over, knowing he had a large spleen and abdominal symptoms. I might say, the story that he gave of this attack was very strange; coming in from quail hunting and getting abdominal pain, loose stools, and then over for a few days, and then some vague things; and we didn't know whether this was related to the large spleen or not. I wondered whether he had diverticulitis, gastroenteritis, or what. He did, of course, have the large spleen and had a little leukocytosis of 15,000 and an increase in platelets. When the leukocyte alkaline phosphatase was elevated and the marrow appeared the way it did, I wondered about a myeloproliferative disorder or some form of lymphoma such as Hodgkin's disease. In the myeloproliferative disorders I was thinking frankly more in terms of a polycythemia vera rather than myelocytic leukemia. It is very remarkable to have myelocytic leukemia for over a decade and to have no more in the blood than this patient had, and to have a high leukocyte alkaline phosphatase. But I wasn't sure either of these was related to the bowel difficulty. We wondered about splenic infarct with the pain on respiration. He came to the hospital and was relieved of some fecal impactions. The next day he was a well man and he wanted to go home; he felt fine; a very dramatic improvement. Then he wasn't so



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Dosage Forms: Oral tablets . . . 250 mg.
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*References available on request.

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good, and then he became worse; he was distended, and Dr. Alrich put in the tube, and in the afternoon of the 22nd he became extremely ill, hypotensive, and worse. I must say, at that time, I did not think about the platelets being a cause of thrombosis. I've seen people with platelets as numerous as this or more, who do not get in difficulty. We discussed whether he might have pancreatitis, which didn't seem to be likely, or a lymphoma or obstruction, or very likely an infarct of the bowel, but I was thinking in terms of aterial bowel obstruction and not venous.

Dr. Mohler: Thank you, Dr. Leavell. Well, it seems to me that this man certainly had some type of myeloproliferative problem, and the question is what category would one end up putting it into when Dr. Smith shows us the pathology. For reasons that both Dr. Leavell and Dr. Wheby gave, I would doubt chronic myelocytic leukemia without any more young cells in the peripheral blood than he had, and with a high leukocyte alkaline phosphatase. Actually everything he has fits with polycythemia vera very well, with a high platelet count, a high white count, a high leukocyte alkaline phosphatase, and splenomegaly. Unfortunately, we never found a high hematocrit, which makes it difficult to make that diagnosis. He had a lot of blood in his bowel, and so that might explain a low hematocrit. I would like to believe that he did have polycythemia vera. Dr. Alrich, was there much blood in the gut at the time the resection was done?

Dr. Alrich: No.

Dr. Smith: It is difficult even to *try* to settle the many important questions that have been raised in discussion of this case. To begin with a feature that was undoubtedly appreciated by all, the small intestine had been reduced to a total length of about four feet by the surgical resection because of the gangrene discovered at operation. The remaining gastrointestinal tract contained no pathologic lesions of its mucosa or wall, although the peritoneum was the seat of a generalized fibrinopurulent peritonitis that had been localized into an abscess in the left upper quadrant. The lack of any remaining perforation or other source of contamination indicates that this peritonitis arose from the intestinal gangrene. The degree of organization apparent in microscopic slides, as well as hints from the clinical history, suggest the peritonitis was three weeks or older in duration. It probably began with some of the first episodes of abdominal pain.

There was no evidence of a bleeding point nor any blood in the gastrointestinal tract. As previously noted, fluid was undoubtedly lost into the intestinal lumen, but little or no loss of blood seems to have occurred at any time.

A large, somewhat grey and dry thrombus completely occluded the portal vein and superior mesenteric vein in the head of the pancreas and extended into the liver but not into the portal tributaries in the mesentery. Sections of this thrombus (Fig. 1), particularly the intrahepatic portion, revealed it to be fairly completely organized and supported an interpretation that the process of thrombosis began in intrahepatic branches long enough before death that it probably antedated all the relevant symptomatology. The arteries of the mesentery were free of thrombus and contained no other lesions.

Thrombosis of the portal vein is a quite unusual situation. A classic syndrome, especially brought to mind by the presence of acute peritonitis, is pylephlebitis, or infected thrombosis arising from acute appendicitis. The appendix in this case was normal except for its share of the generalized peritonitis. A few days after this case, we had another of portal thrombosis in a chronic alcoholic with chronic pancreatitis, which also reminded us of what has been labeled cavernous transformation of the portal vein, a chronic lesion very occasionally recognized in cirrhotics. The present patient, however, had no evidence of any antecedent local

disease about the portal vein that could be correleated with its thrombosis.

I, too, am indebted to Dr. Alrich for calling to our attention the only other case that seems to be similar to this one. That

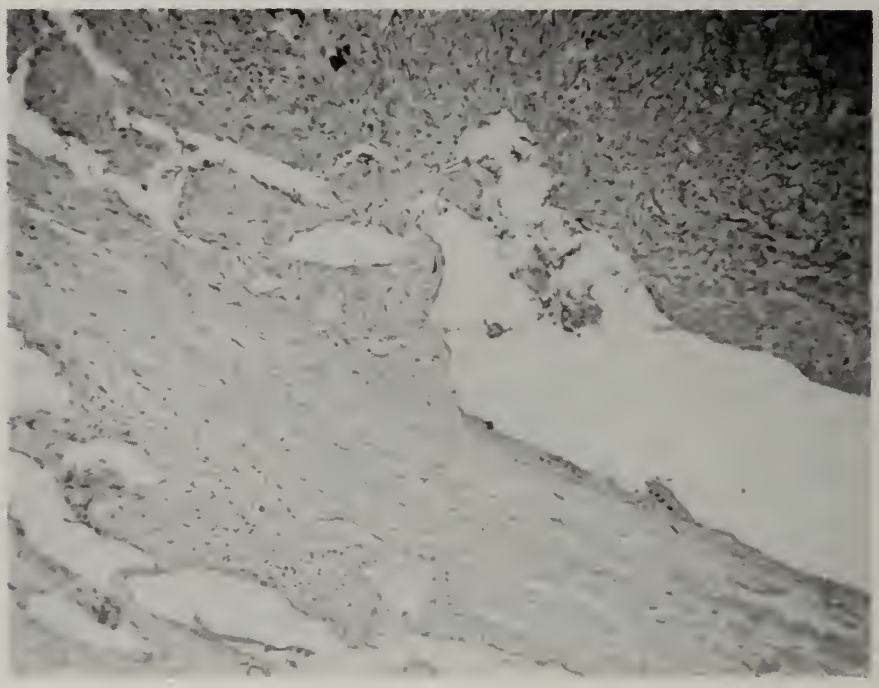


Fig. 1. Section of portal vein with organizing thrombus X120 H&E.

case was of a young woman with an acute course but who also had organized thrombi in her portal veins. There were also other remarkable features of the hematopoietic organs that closely resemble the present case. As Dr. Wheby suggests, these seem to be instances of a disorder of the formation of elements of the blood that terminate almost incidentally in the catastrophe of portal venous thrombosis and gangrene of the bowel.

The problems of terminology in the area of the present patient's primary disease have been well outlined by Dr. Wheby. For me, "myeloproliferative disorder" has been a less than favorite term. It seems to lack a specificity of connotation as well as euphony. Furthermore, there is great variation within the cases so classified, with predominance of one or another cell line of the bone marrow and instances in which there are rather total shifts, such as is almost to be expected with polycythemia vera and its proclivity to terminate as leukemia. In almost no case is there a total confinement of the proliferative activity to a single cell type throughout, or even at most stages of the disease. Whether these observations indicate variations in the manifestations of a single disease or a constellation of related diseases is still unsettled. Hopefully, new phenomena and tests, such as the Philadelphia chromosome, may aid in clarifying interrelations within this group.

In the past, and with reasonable premises, most of these variations have been classified as or with chronic myeloid leukemia. Because of morphologic features of the bone marrow and spleen, I would be content to offer such a diagnosis for the present case, but I must concede that my hematologist friends will consider me quite old fashioned and adynamic in my concepts. I am not sure, however, that we gain a great deal of fundamental understanding simply by choosing a different name.

The spleen (Fig. 2) was enlarged to a weight of 1,100 grams and presented a hyperplastic picture with infarcts that was

quite suggestive of chronic myeloid leukemia. In fact, I would applaud a second year student for that diagnosis of the gross specimen. Microscopically, there are also changes that consist of infiltration of the

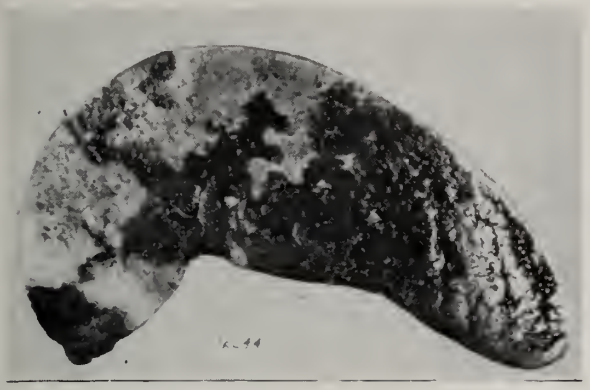


Fig. 2. Large hyperplastic (1100 grams) spleen containing several depigmented infarcts.

pulps with granulocytic leukocytes in various stages of maturity, small foci of normoblastic proliferation, a number of megakaryocytes and a suppression of the follicular structure. The picture is definitely that of excessive proliferation of hematopoietic elements. It is perhaps less anaplastic and of greater variation than any but the most indolent of chronic myeloid leukemias.

The bone marrow (Fig. 3) is most comparable to that of leukemia. In both the biopsy and at autopsy, it was almost totally hyperplastic and consisted principally of metamyelocytes and myelocytes with a rather striking number of megakaryocytes.

Whatever may be the fundamental etiology or nature of this disease, it has resulted in a marked proliferation of myelopoietic elements that resembles leukemic neoplasia in its intensity. Although several cell lines, particularly that of the granular leukocytes, are prominently represented in the spleen and bone marrow, the platelets were most abnormally affected in the circulating blood. Their increased numbers seem to have led to progressive thrombosis of the portal vein, at first mural within the liver but finally occlusive of the main portal trunk. From this there developed circulatory deficiency of the intestines and finally gangrene and peritonitis. In other organs there was evidence of ischemic nephrosis, centrilobular atrophy and icterus of the liver, an ancient recanalized thrombus in the right coronary artery, and old scars in the heart.

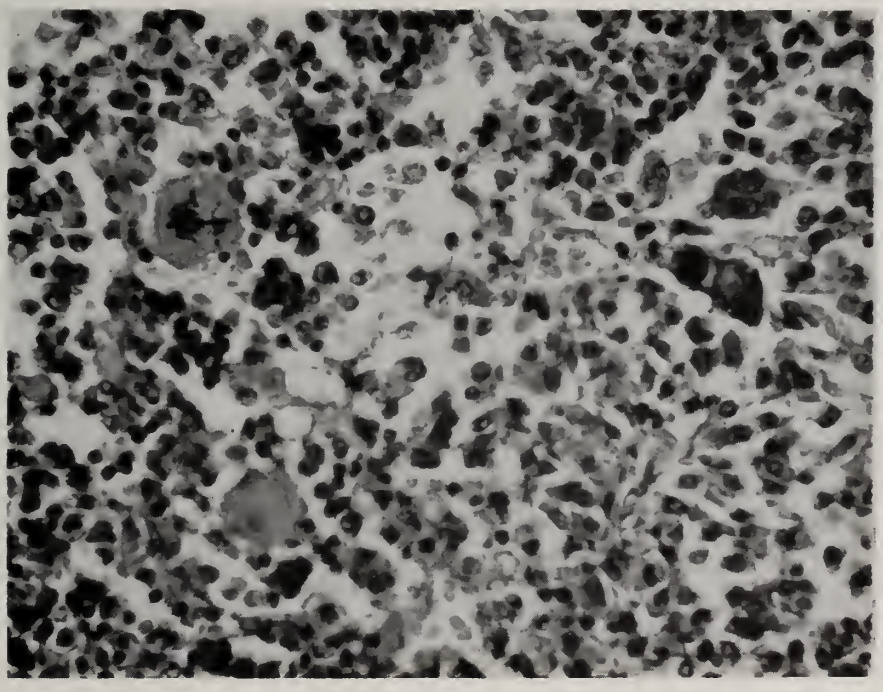


Fig. 3. Section of vertebral bone marrow showing myeloid hyperplasia and increased numbers of megakaryocytes. Note the mitosis in one megakaryocyte. X500 H&E.

Anatomic Diagnosis:

Chronic myeloid leukemia (myeloproliferative disorder) with infiltration of only the bone marrow and spleen and involving especially the megakaryocytes and platelets.

Organized and recent thrombi in the portal vein with resection of the small intestine for gangrene.

Fibrinopurulent peritonitis with left upper quadrant abscess.

Reference

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Today's Health Articles Tackle Controversies

The June issue of *Today's Health,* the AMA's popular lay magazine, reports on the furor over the female "pill" and takes a realistic look at the chances for a pill for men. The article discusses the research of scientists who work toward birth control at the level of "first causes"—male contraception.

Another feature tells of prominent professional athletes who have given copper bracelets a big boost in the hierachy of quackery devices. *Today's Health* warns of accepting them as cures for athritis, as peddlers claim; less harmless, except perhaps to one's sanguine and naive pursuit of instant athletic prowess, are the debunked testimonials of champions: "I owe it all to my charm bracelet." *Today's Health* does give one guarantee, however: a green wrist.

Other June articles: a salute to the 25th anniversary of fluoride additives to American water supplies; a discussion of cancer-linked viruses and the hope for an effective vaccine, and a workable approach to overcome fear of flying.

Medicare (Part B)....

CURTIS J. KELLY, J.D.
Administrator, Medicare
Richmond, Virginia

Requests for Payment

Many bills for professional services rendered by physicians are either delayed or are not reimbursed in full because the information provided with the bill fails to contain sufficient detail.

The following information is required from physicians to enable their billings to be considered by Medicare and may be provided on either the Request for Payment (SSA-1490) or on the physicians' itemized bills. It may be of value to the physicians' office staff to review these requirements.

(a) *Date of service.* Inclusive dates may be used if identical services are provided on each visit. If used, please indicate number of actual visits, etc. Please separate dates and charges for carryover period, last three months of year and for different calendar years.

(b) Place of service. Codes shown on bottom of SSA-1490 may be used.

(c) Fully describe surgical or medical procedures and other services or supplies furnished for each *date* of service.

  (1) If surgery involved — please fully describe or provide copy of operative notes.

  (2) If laboratory — identify each procedure by date and charge.

  (3) If injections—identify each by *generic name* and provide date and charge.

  (4) If physician visits—fully de-describe the surgical or medical services provided.

(d) Nature of illness or injury requiring the services or supplies (diagnosis). This entry should be complete enough to allow Medicare to determine that each service supplied was covered, medically necessary and consistent with the information furnished as per (c) above.

(e) Charges—If related to unusual circumstances, please explain.

The first exclusion in the Medicare Law is for items or services which are not reasonable and necessary for the diagnosis or treatment of injury or disease or to improve the functioning of a malformed body member. From the medical evidence provided by the physician and supplier our file must affirmatively reflect that the services provided were both reasonable and necessary, or we must decline payment. While statistical norms to represent patterns for diagnosis and treatment of specific diseases are relatively simple to obtain the application of these norms to individual cases can be quite difficult. Within each physician's practice there are patients who require professional service at a greater frequency and for longer duration than the usual patient. When these exceptional cases are encountered among Medicare beneficiaries, an explanation of the need for the services billed will expedite payment of Medicare benefits.

For example, usually in a documented case of pernicious anemia, maintenance injections of vitamin B_{12} may be required once or twice a month for a lifetime. Injections at more frequent intervals, except initially and immediately after diagnosis, raises the question of overutilization and requires explanation.

Another example occurs in nursing homes

providing custodial care. Many such homes have patients with stabilized chronic illnesses which may respond to palliative treatment but are not curable. Usually periodic observation by a physician to observe the patient's status and his response to supportive measures and to make necessary changes in the standing orders is all the physician's services required. Informed medical opinion estimates the frequency of such periodic observation at about once a month.

We are expected to identify Medicare claims in which the care or treatment is unusual and our files must contain sufficient information to justify payment. When processing personnel are in doubt that the medical information provided satisfactorily explains unusual treatment, we utilize the following consultative resources: (1) Local impartial practicing physician; (2) Medical Society Review Committee; and (3) A physician in our Medical Department. Such consultants are used because we feel that practicing physicians are best qualified to evaluate the propriety of medical care.

4619 West Broad Street
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AMA-ERF Gives $1 Million to Med Schools

Contributions for the support of medical education, made during 1969, and distributed to individual schools this spring, totaled $956,909.64. The funds were collected and allotted by the American Medical Association Education and Research Foundation. Recipients were 109 U.S. and nine Canadian medical schools. The grants to Canadian schools were specifically earmarked for them by donors.

Checks designated for each of the schools were mailed March 9 to secretaries of state medical associations for presentation to the deans.

Almost equal-sum grants from undesignated funds were made to each school, but earmarked contributions totaled $721,939.17.

Receiving the largest total grants were: University of Illinois College of Medicine, $29,291.65; Indiana University School of Medicine, $28,861.39; Northwestern University Medical School, $28,754.42; University of Maryland School of Medicine, $25,401.26; and University of Tennessee College of Medicine, $23,820.07.

Cancer Trends . . . .

WILLIAM CONSTABLE, M.B., Ch.B., D.M.R.T.
BYRD S. LEAVELL, M.D.

Edited by—

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Richmond, Virginia

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Charlottesville, Virginia

The Management of Hodgkin's Disease

In the past decade our views as to the curability of Hodgkin's Disease have undergone a radical revision. The results from major radiotherapy centers in the United States, Canada, and Great Britain have shown that Hodgkin's Disease, particularly in the early stages of the disease, is curable in a large number of cases and that these results hold up fifteen to twenty years after treatment. This has led to a pronounced sophistication in our investigation of the condition with particular emphasis on determining the extent of the disease. Modern radiological techniques have made this possible and have enabled some degree of agreement to be reached on an international staging for Hodgkin's Disease. The pathologists have contributed by defining a number of varieties of Hodgkin's Disease which appear to correlate well with the evolution and prognosis of the disease. With better understanding of the natural history and spread of the disease, treatment by the radiotherapists and hematologists has become more logical and positive in its approach. Finally, in recent months help is being sought from the surgeon to further our therapeutic endeavors.

From the Division of Radiotherapy and Department of Medicine, University of Virginia Hospital, Charlottesville, Virginia.

Sponsored by the Professional Education Committee, Virginia Division, American Cancer Society.

Incidence

Hodgkin's Disease is a relatively uncommon malignancy being slightly more frequent than testicular tumors in the male and rather less frequent than salivary tumors in females. The disease occurs at all ages but is rare before five years of age, and thereafter reaches two peak incidences at 15-30 years and +50 years. There is a male predominence of 54% and 63% in the first and second modes respectively.

Investigation

Characteristically, the disease presents as a painless, peripheral lymphadenopathy (82-93% of cases) with or without systemic manifestations (approximately 50% of patients). The most frequently involved site of lymph node enlargement as a presenting sign is the cervical region (51%) followed by the mediastinum, axillae, and groins.[2,13,16] A fifth or so of patients will have a palpable spleen or liver, an important clinical guide to the eventual diagnosis.

The differential diagnosis of a patient with peripheral lymphadenopathy is reasonably clear-cut. An infective origin for the nodes must come first on our list of possibilities to be excluded before the diagnosis of Hodgkin's Disease may be suspected. Foci of acute or chronic infection in the lower half of the body may be readily eliminated on clinical examination, but where the enlarged lymph nodes are present in the neck, a good review of the upper respiratory passages by a competent ENT specialist is required. Systemic infective processes may also be considered, in particular infectious mononucleosis and secondary syphilis. These diseases may be excluded by

use of the appropriate serological tests. Although uncommon nowadays, tuberculous lymphadenitis should still be kept in mind and a radiograph taken of the neck to exclude the presence of calcification in the lymph nodes, a common finding if they are tubercular in origin. It must be remembered, however, that the association of Hodgkin's Disease with other disorders is well documented.[14]

Next, the question of a malignant process apart from the lymphoreticular disorders must be considered. Initially at this stage of the investigation an adequate clinical examination, routine laboratory tests and a chest x-ray will suffice, together with, in those cases where cervical lymphadenopathy is present, an ENT opinion to exclude a possible undetected primary in the upper respiratory passages. If all these preliminary investigations are clear, the next step is to obtain a biopsy of an enlarged node.

In those cases where the patient presents with mediastinal lymphadenopathy or a mass in the abdomen, a more extensive search for an unknown malignant primary will be instituted. Once again, however, we will arrive at the need for a biopsy. Occasionally a supraclavicular node biopsy ("scalene" node) or a needle biopsy of the liver will provide the diagnosis, but failing this a thoracotomy or laparotomy will become necessary.

The second phase of the investigation is directed towards determining the extent of the disease when the histological diagnosis has been made. A complete hematological survey, liver function tests, bone marrow examination, and various radiological examinations are now considered essential for the correct staging of the disease. The radiological examinations which are emphasized are lymphangiography, inferior venacavography and intravenous pyelography. The value of these investigations is subject to some debate and this is discussed more fully below. Other investigations may be required as indicated by the clinical findings such as renal function studies, barium studies, etc.

With the results of these investigations available, staging of the disease according to the accepted international staging is possible.

Lymphangiography

The single most important investigation contributing to accurate staging is lower extremity lymphangiography. In Davidson's study[2] a third of the patients were restaged as a consequence of the lymphangiographic findings (See Table I). Certain

TABLE I

Clinical Stage	Clinically Diagnosed Number of Patients		Advanced to State II	Advanced to Stage III	Final Distribution Number of Patients	
I	62	39%	11	11	40	25%
II	73	45.5%		30	54	34%
III & IV	25	15.5%			66	41%

Value of lymphangiography (modified from J. W. Davidson).

authorities, however, express doubts as to the value of the investigation and it must be admitted that considerable experience is required to correctly interpret many of the radiographic features. A further consideration is that the procedure is not without complications, although in experienced hands these are very infrequent. Wound complications (1%) such as infection, pain at injection site, extravasation of contrast medium, and necrosis are the commonest; and the more severe complications such as hypersensitivity to the contrast, pulmonary emboli, lipid pneumonitis and emboli to other organs are, fortunately, rare.

Clinical Staging[10]

Discussion of Hodgkin's Disease has been much simplified by the introduction of an International Staging.

Stage I:

Disease limited to one anatomic region

Schering

After only one year:

Administered to more people than live in Lynchburg and Newport News.*



Injectable Garamycin®

brand of gentamicin sulfate injection

An estimated 208,000 patients have received GARAMYCIN Injectable to date. The combined population of Lynchburg and Newport News is 193,000. (Estimated 1969 figures from The New York Times Encyclopedic Almanac 1970.)

See Clinical Considerations section on last page...

Mounting acceptance in the hospital...

Proven clinical effectiveness



Respiratory Infections

Outstanding results in serious gram-negative respiratory infections[1,2]

GARAMYCIN Injectable may prove successful where other antibiotics have failed.



Urinary Tract Infections

Strikingly effective in selected urinary tract infections[3]

With relatively low intramuscular doses, the promptly attained levels of GARAMYCIN achieved in the urine are considerably higher than the concentrations required for effectiveness against virtually all susceptible gram-negative pathogens. (Appropriate precautions are indicated in patients with impaired renal function; consult Package Insert for full details.)



Septicemia

May be lifesaving[4-6]

Numerous investigators have drawn attention to the value of GARAMYCIN Injectable in the treatment of gram-negative septicemias, often complicated by shock. Many hospital strains of *Serratia* are susceptible.[6]



Wounds and Burns

Response may be dramatic in wounds and burns complicated by sepsis[7]

The established efficacy of GARAMYCIN Injectable against *Pseudomonas*—as well as most other gram-negative pathogens—makes it an especially useful agent in the treatment of infected wounds and burns.

Important Precautionary Note Patients receiving treatment with GARAMYCIN Injectable (gentamicin sulfate injection) should be under close clinical observation because of the toxicity associated with the use of the drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with preexisting renal damage, treated with GARAMYCIN Injectable for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with preexisting renal damage.

This drug should be limited to the treatment of serious infections caused by susceptible gram-negative bacteria, with due regard for relative antibiotic toxicity. (See Clinical Considerations section.)

Mounting evidence in the laboratory...

Schering

Over 95% gram-negative pathogens sensitive.*

o other antibiotic performed comparably *in vitro* against gram-negative pathogens.
a nationwide culture audit of antibiotic sensitivity patterns, sensitivity reports from 106 hospitals, eographically representative by census tract and of varying sizes, were analyzed. During the three-onth period, **every** gram-negative culture slip from **every** hospital was surveyed. The total number of ultures involved in the audit was 97,091. The total number of sensitivity determinations was 643,503.

Pathogens	Percentage of sensitive strains Number of strains tested Antibiotics*							
	Garamycin	Kanamycin	Cephalothin	Cephaloridine	Ampicillin	Colistimethate	Chloramphenicol	Tetracycline
Klebsiella pneumoniae	99.5% 962	84.7% 992	86.2% 995	76.1% 67	32.7% 1,020	96.3% 640	82.9% 1,028	77.1% 1,026
Aerobacter aerogenes	95.9% 2,739	86.1% 2,818	53.5% 2,985	58.8% 1,514	22.7% 3,066	88.6% 2,603	85.8% 3,071	67.8% 2,981
Klebsiella aerobacter group	98.8% 566	83.9% 547	66.1% 522	60.5% 276	28.0% 553	89.5% 560	86.2% 587	62.8% 433
Klebsiella, all others	92.7% 2,944	83.3% 3,186	77.4% 2,976	67.5% 627	13.5% 2,883	95.0% 2,105	81.6% 3,212	70.6% 3,063
Pseudomonas aeruginosa	91.6% 4,528	29.8% 4,460	6.6% 4,418	6.6% 1,279	6.0% 4,360	91.3% 3,852	26.9% 4,608	26.4% 4,404
Proteus, indole-positive	91.8% 1,031	85.8% 1,062	39.9% 981	54.1% 364	40.2% 1,042	10.3% 758	76.1% 1,096	42.1% 1,051
Proteus mirabilis, indole-negative	94.9% 3,272	90.1% 3,378	83.1% 3,290	77.5% 975	78.0% 3,274	8.8% 2,634	85.9% 3,469	26.8% 3,278
Proteus, unspecified	96.2% 1,335	85.8% 1,371	71.7% 1,434	70.0% 647	64.7% 1,435	11.2% 1,233	76.0% 1,421	22.4% 1,298
Escherichia coli and all other Escherichias	96.4% 12,557	91.4% 12,818	87.8% 12,686	88.8% 4,251	74.6% 12,899	95.4% 10,623	94.1% 13,086	70.0% 12,559
Paracolobactrum, all	93.4% 303	88.9% 325	62.0% 305	74.2% 62	43.8% 340	80.9% 215	87.1% 350	72.6% 340
Coliform bacteria	99.0% 593	91.2% 649	81.5% 637	66.7% 21	52.7% 624	95.6% 607	91.6% 678	76.1% 637
Totals	95.1% 30,830	80.5% 31,606	65.3% 31,229	68.1% 10,083	50.3% 31,496	75.8% 25,829	79.7% 32,606	56.5% 31,070
Gram-positive (included for consistency with Package Insert, not an approved indication)								
Staph—S. aureus, coagulase-positive	97.4% 1,548	88.8% 1,458	97.7% 2,050	98.7% 636	61.1% 1,559	20.4% 628	94.4% 2,123	83.7% 1,966
Staph—S. aureus, unspecified	99.3% 993	92.8% 902	98.1% 1,289	95.3% 213	45.8% 1,153	29.3% 116	96.4% 1,427	82.3% 1,360

*Adapted from a three-month, nationwide hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachusetts (mid-May to mid-August, 1969).[6]
Antibiotics with significant gram-negative spectra are included. Organisms are listed as reported by laboratory.
Sensitivity testing was done by the disc method, a generally reliable test in the hospital setting. It should be noted, however, that the results with GARAMYCIN were somewhat higher than the results reported where the tube dilution technique was used. (See Clinical Considerations section which follows.) The concentration of the GARAMYCIN disc was 10 mcg.
Whereas standard testing methods were used by all hospitals, it is acknowledged that in a survey of this kind considerations such as differences in methodology are possible sources of error. The comparative percentage-sensitivity results derived from a survey of this kind are, therefore, not absolute. One should keep in mind also that the proper selection of an antibiotic is based not only on susceptibility testing but on relative toxicity and other clinical considerations as well.
It is felt, nonetheless, that the broad scope of the survey and the extreme care in data collection and tabulation permit a conclusion that the results are *generally* representative of current nationwide antibiotic sensitivity patterns.

Injectable Garamycin®
brand of gentamicin sulfate injection

See Clinical Considerations section on last page...

Injectable Garamycin®
brand of gentamicin sulfate injection

ADULT DOSAGE GUIDELINES

See definitive prescribing information in Package Insert.

Patients with Normal Renal Function

Total Daily Dose (administered in two, three, or four divided doses)			
Urinary Tract Infections (due to susceptible strains of gram-negative bacteria)†	**Less Severe** 0.8-1.2 mg./kg. for 7-10 days	**Resistant/ Moderately Severe** Larger doses or additional antibacterial therapy should be considered in severe urinary tract infections or in resistant cases involving the renal parenchyma or anatomic anomaly.	**Serious/ Life-Threatening** up to 5 mg./kg.
Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa,* and species of indole-positive and indole-negative *Proteus, Escherichia coli,* and *Klebsiella-Aerobacter.* Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa,* 828 (93%); *Escherichia coli,* 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: GARAMYCIN Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those pre-existing renal damage, treated with GARAMYCIN Injecta usually for longer periods or with higher doses than recommen

GARAMYCIN Injectable is potentially nephrotoxic, and should be kept in mind when it is used in patients with pre-exis renal impairment. Kidney function diminished by infection of upper urinary tract may, however, improve during effective t ment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs such streptomycin and kanamycin or of potentially nephrotoxic d such as polymyxin, colistin, and kanamycin with gentamicin sul has not been shown to afford any clinical advantages and, more may result in additive toxicity. Monitoring of vestibular, cochl and renal function will provide guidance for therapy in such c

Precautions: In patients with impaired renal function in wh serious infection develops, serum concentrations of the drug rise, with consequently increased risk of ototoxicity. In these tients or in those in whom recommended dosage or duratio therapy must be exceeded as a life-saving measure, routine stu of kidney function should be performed when possible. These be supplemented by evaluation of the vestibular and auditory fu tion and measurement of serum concentration of the drug w feasible. Serum concentrations of gentamicin should be maintai below the range of 10-12 mcg./ml. to reduce risk of ototoxicity

Ordinarily, treatment should not be given for more than 7 t days or be repeated unless required for serious infection not sponsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Inject may occasionally result in overgrowth of nonsensitive organism superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicit nephrotoxicity have not been established. Studies in pregnant mals have not revealed teratogenic or ototoxic effects in the f GARAMYCIN Injectable should not be used in pregnant patient in women of childbearing age unless its use is deemed advis by the physician.

Adverse Reactions: The overall incidence of ototoxicity consid related to treatment with GARAMYCIN Injectable was 2.8 per (16 of 565 patients). Contributory factors (two or more factors relevant to most patients) were as follows: 10 had azotemia received a total of 1 gram or more of the drug, 7 had recently ceived other potentially ototoxic antibiotics (streptomycin or k mycin), and 5 were over 60 years of age. Six also had decre high-tone hearing acuity, which returned to or toward norma the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients sho increases in BUN that were probably related to treatment GARAMYCIN Injectable. Of 20 increases probably or possibly rel to treatment, 7 were reversible, 9 occurred in terminal patients, 4 had no follow-up.

Other adverse reactions associated with treatment were one inst each of urticaria, decreased hematocrit, and reversible depres of granulocytes with normal bone marrow. Other rarely repo and possibly treatment-related adverse reactions were anemia creased reticulocyte count, rash, purpura, drug fever, hypoten convulsions, twitching, salivation, nausea, vomiting, increased t aminase activity (SGOT or SGPT), increased serum bilirubin creased serum calcium, and joint pain.

Packaging: GARAMYCIN Injectable, 40 mg./cc., 2-cc. multiple- vials, for intramuscular administration.

References: (1) Brayton, R. G., and Louria, D. B.: Gentamici gram-negative urinary and pulmonary infections, Arch. Int. *114*:205, 1964.* (2) Louria, D. B.; Young, L.; Armstrong, D., Smith, J. K.: Gentamicin in the treatment of pulmonary infect J. Infect. Dis. *119*:483, 1969. (3) Cox, C. E.: Gentamicin, a aminoglycoside antibiotic: Clinical and laboratory studies in uri tract infections, J. Infect. Dis. *119*:486, 1969. (4) Groll, E.: Cli experience with gentamicin, data from 12 German clinics, in tamicin: First International Symposium, Paris, January Lucerne, Essex Chemie AG, pp. 121-128.* (5) Jackson, G. G.: Lat tory and clinical investigation of gentamicin, *ibid.*, pp. 62-74 Medeiros, A. E.: Discussion, J. Infect. Dis. *119*:533, 1969. (7) Polk Discussion, J. Infect. Dis. *119*:529, 1969. (8) Three-month, nation hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachu (mid-May to mid-August, 1969).

*Dosage in this investigational study was less than now recomme in Package Insert.

For more complete prescribing details, consult package inse Physicians' Desk Reference. Schering literature is also avai from your Schering Representative or Medical Services Departn Schering Corporation, Union, New Jersey 07083.

AHFS CATEGORY 8:12.28

(Stage I_1) or two contiguous anatomic regions (Stage I_2) on the same side of the diaphragm.

Stage II:

Disease in more than two anatomic regions or in two non-contiguous regions on the same side of the diaphragm.

Stage III:

Disease on both sides of the diaphragm but not extending beyond the involvement of lymph nodes, spleen, and/or Waldeyer's Ring.

Stage IV:

Involvement of the bone marrow, lung parenchyma, pleura, liver, bone, skin, kidneys, gastrointestinal tract, or any tissue or organ in addition to the lymph nodes, spleen, or Waldeyer's Ring.

All stages will be sub-classified as "A" or "B" to indicate the absence or presence respectively of systemic symptoms. The following documented symptoms otherwise unexplained are significant: (a) fever, (b) night sweats, and (c) pruritis.

Figure 1 illustrates the anatomic sites which are recognized for use with this staging.

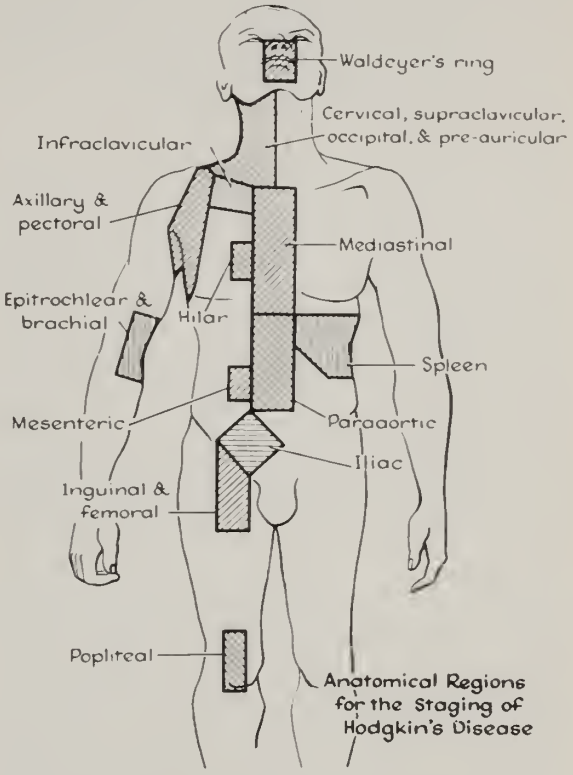


Fig. 1. Anatomic sites used in staging of Hodgkin's Disease.
(Reproduced with permission of Rosenberg, S. A.: Radiology 87: pp. 145-147, 1966.)

Histology

For many years the histological classification of Jackson and Parker into three groups —paragranuloma, granuloma, and sarcoma —has dominated the field. However, this classification has been of limited value in that only 5% of the group could be diagnosed as paragranulomas or sarcomas, constituting too small a group to relate to prognosis or therapy. A new classification has been introduced by Lukes and Butler[8] and adopted internationally. This defines four histological types of Hodgkin's Disease, the Reed-Sternberg cell being essential for diagnosis:

A. *Lymphocytic Predominance*

This variety may occur either in a diffuse or nodular form and is characterized by an abundance of lymphocytes or histiocytes. There is virtually no evidence of fibrosis and Reed-Sternberg cells are usually infrequent. Jackson and Parker's paragranuloma would be included in this group. In one series 16% of cases were interpreted as being of this type.

B. *Nodular Sclerosis*

This variety presents a nodular pattern, islands of lymphoid tissues being separated by bands of collagen. The Reed-Sternberg cells are atypical and lie in lacunae making them easy to identify. It is the most frequently occurring histological picture (40%).

C. *Mixed Cellularity*

A large variety of cells are present, including numerous eosinophils, fibroblasts, and plasma cells. Reed-Sternberg cells are usually abundant. The classical Hodgkin's Disease granuloma would be classified within this group. 26% of cases have been reported as falling into this category.

D. *Lymphocytic Depletion*

The last type presents a diffuse fibrosis with a few scattered lymphoid cells. The number of Reed-Sternberg cells varies markedly. Those lesions with a large number of pleomorphic Reed-Sternberg cells and few lymphocytes would have been called Hodgkin's Sarcoma in the old classification of Jackson and Parker. Some 18% of cases fall into this category.

Cases showing lymphocytic predominance occur more frequently in the early stages of the disease, whereas those with lymphocytic depletion are seen more frequently in the later stages. Nodular sclerosis and mixed cellularity types are distributed throughout all stages. An interesting finding has been the high incidence of nodular sclerosis in mediastinal involvement. The theory of Lukes and Butler in this regard is that the histological variations seen in Hodgkin's Disease represent differences in host response. There is an evolution of the disease from a predominantly lymphocytic proliferative pattern associated with early disease, through a mixed cellularity phase, to a phase showing a depletion of all cellular components except Reed-Sternberg cells and represented by the lymphocytic depletion types. Nodular sclerosis does not exactly fit into this scheme and they would interpret this as representing a regional expression of Hodgkin's Disease.

A study of survival in relation to the histology and stage of the disease shows that the predominantly lymphocytic disease is compatible with extremely prolonged median survivals, particularly for the nodular type; whereas for those cases showing lymphocytic depletion and generalized disease, the survival is extremely short. Nodular sclerosis when limited in involvement also carries a very good prognosis, but with extension of disease, survival rapidly decreases. Mixed cellularity goes along with a prognosis intermediate between the proliferative and depleted types. Smithers, stressing the importance of immunological disturbances associated with Hodgkin's Disease and their probable relationship to the histological picture, summarizes modern views thus:

> "Hodgkin's Disease appears clinically to be a disturbance of the thymic mediated system of cellular immunity associated with progressive neoplasia. The pattern varies from one which is benign, localized, lymphocytic predominant and imminently curable, to one which is malignant, rapidly disseminating, shows lymphoid depletion and is fatal. A few patients may die of immunological failure and overwhelming infection with little, if any, tumor detectable post-mortem. Tumor detection may be preceded by months, or even years of general illness and lymph node enlargement may come and go a number of times before it becomes established." [14]

Treatment

Optimism in treating Hodgkin's Disease has considerably improved with the long-term reports from major radiotherapy centers around the world.[4,6,9] These have shown that aggressive radiotherapy results in cures. Easson demonstrated that the expectation of life in patients with early Hodgkin's Disease surviving ten years was similar to that of the general population of the same sex and age composition, and, therefore, considered Hodgkin's Disease to be curable. Another revolutionary view is that Hodgkin's Disease is a unifocal disease at inception and,

therefore, it is possible to encompass and treat all the disease in the early stages (before it has metastasized). This was demonstrated by the Stanford group, who showed that the spread of the disease occurs in an orderly fashion from the initially involved lymph nodes to the contiguous groups.[12] Finally, the greater availability of telecurie and megavoltage radiotherapy equipment has made the delivery of the high doses required to large volumes technically easier.

Radiotherapy

Most treatment policies have evolved to a similar pattern as that now employed at the University of Virginia Hospital. Stage I, II, and IIIA disease receive radical curative radiotherapy to all known involved lymph nodes and adjacent, apparently uninvolved areas. Thus, the radiotherapy for disease restricted to the cervical lymph nodes also takes in the axillae and mediastinum (the so-called "mantle" field). Similarly, the disease in the groin is treated by an inverted T-shape field (Y-shaped of certain authors), taking in all pelvic and paraaortic nodes. In Stage III disease these fields are combined and the spleen may also be included. A tumor dose of 3500-4000 rads in three to four weeks treating five days weekly is delivered using the 8 MV linear accelerator. Radiotherapy to these volumes and to this order of dose with the sophisticated equipment now available is not without hazard, and considerable skill is required if such complications as radiation myelitis, carditis, pneumonitis, nephritis, are to be avoided. As these complications may be considerably delayed in making their appearance, it is essential that a close combined follow-up by radiotherapists and hematologists is rigorously maintained for some years after the treatment. Stage IV disease is usually a chemotherapeutic problem with radiotherapy used as an adjunct for persistent masses or rapid relief of symptoms.

Chemotherapy

The response of Hodgkin's Disease to chemotherapeutic agents provided much of the original stimulus in that field. Nitrogen mustard and other more modern alkylating agents such as cyclophosphamide, chlorambucil, etc., have all proved extremely effective. Vinblastine, a periwinkle alkaloid, and more recently, procarbazine, have earned a place in the subsequent treatment of those patients who have become resistant to other agents. Prednisone has been of great value in advanced cases in poor general condition, perhaps with an acquired hemolytic anemia which occasionally occurs in Hodgkin's Disease. However, the recent trend has been to use a combination of drugs in repeated courses. One regime which has produced a high percentage of remissions for prolonged intervals, combines nitrogen mustard, vincristine, procarbazine, and prednisone (so-called "MOPP" regime). The reader is referred to the original reports on this combination for further information.[3]

At the University of Virginia our present policy is to treat Stage IIIB and Stage IV lesions primarily by chemotherapy and employ the combination described above. Since the chemotherapy of Hodgkin's Disease is continually evolving and cases are not common, a plea is made here to refer suitable cases to centers involved in controlled studies. Every case of Hodgkin's Disease should be considered as a potential increment in the quest for maximum control of the disease.

Recent Developments in Treatment

Since radiotherapy has been shown to be effective in Stage III disease, procedures have been designed to more accurately define the extent of the disease so that it may be treated at an earlier, and presumably more susceptible stage. Lymphangiography and other radiological procedures are able to demonstrate unsuspected abdominal disease in a significant number of patients. How-

ever, equivocal and false negative findings are not infrequent. Laparotomy has, therefore, been undertaken in certain cases to better define abdominal lymph node involvement and provide a useful correlation with the radiological findings. Splenectomy has usually been carried out at the same time as this reduces the volume to be irradiated and eliminates unnecessary irradiation to the left kidney.[5] Finally, in young women, opportunity may be taken to transpose the ovaries, usually in a position anterior and posterior to the uterus to avoid sterilization where further pregnancy is desired. However, the latter procedure should not be entered into lightly in view of the unavoidable "genetic" pollution even with the best shielding.[15]

Random studies are presently underway to assess the value of total nodal irradiation even in the early stages of the disease and seem to indicate this is of value in Stages IB and IIB. However, time is required for these results to mature.[1]

The possibility of combining radiation and chemotherapy has many attractions, particularly in the later stages. Recovery of the bone marrow reserve after chemotherapy has now been satisfactorily demonstrated and the possibility of adding yet another agent (radiation) is being considered.

Prognosis

Stage I disease appears to be curable in excess of 90% of cases at 5 years with aggressive radiotherapy, and this would appear to be an adequate indicator as to ultimate survival.[7] That five years was not formerly considered a good indicator can be related to the effectiveness of modern investigative procedures in excluding later stages with their poor, but often prolonged survival. In fact, it should not be forgotten that "improved" results in all malignancies may be as attributable to staging becoming more exclusive rather than to new techniques.

Stage III cases treated by intensive radiotherapy have resulted in a remarkable 50% five-year survival. Combination therapy as described above has achieved 81% complete remissions and a median survival of 29 months in those entering complete remission. In all stages women have shown a considerably better survival than men.[3]

Summary

Hodgkin's Disease is a classic example of the modern cooperative approach to malignant disease and the results that such interspecialty good-will can achieve. However, there are still many problems to be solved and perhaps the greatest need is for sufficient cases to be brought together to enable significant results to be rapidly obtained. The specialized techniques of diagnosis (lymphangiography) with therapy (megavoltage radiation) achieve their maximum potential when they are more than occasional procedures.

Drug Terminology

Clinical Name	*Trade Name*
Nitrogen Mustard	Mustargen
Cyclophosphamide	Cytoxan
Chlorambucil	Leukeran
Vinblastine	Velban
Vincristine	Oncovin
Prednisone	Prednisone
Procarbazine	Matulane

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Comment

Drs. Constable and Leavell have nicely summarized the contemporary concepts of the treatment of Hodgkin's disease, ideas at some variance with those taught during the years that many of us were medical students. Attention to diagnostic details, and to clinical staging in particular, becomes much more importance when one seriously considers a significant number of these patients potentially "curable". Although curability decreases somewhat with lymphosarcoma or reticulum cell sarcoma, we would be remiss if we did not also stress that these ideas of staging for aggressive treatment in selected patients apply to these other forms of lymphoma as well.

To the excellent discussion of diagnostic procedures necessary for staging Hodgkin's disease (and other lymphomas) we believe evaluation of the immunologic status of patients may also be important. The hematology and dermatology divisions at MCV have included tuberculin, DNCB sensitization, and other means of assessing delayed hypersensitivity as well as antibody forming capacity as part of the clinical assessment of lymphoma patients. Evidence has accumulated that these methods further refine the staging process.

Although the "curability" of stages I and II Hodgkin's disease by aggressive radiotherapy has been adequately demonstrated by a number of investigators, there are still a number of unsettled issues related to the extent of the anatomical areas to be treated, the value of diagnostic laparotomy and splenectomy, etc. For this reason physicians need to be cognizant of the continuing need for randomized study of alternative treatment plans for these potentially curable patients (I and II). When patients are staged as IIIB and IV, randomized study of treatment alternatives (i.e. combined chemotherapy and x-ray, multiple drug trials, and trials of new agents) is a necessary program if we are to further improve the management of these patients with a more advanced stage of disease. At this time of new hope for improving the treatment plan for lymphomas in general it seems reasonable to consider the planning of treatment for all such patients in conjunction with those treatment centers where these new concepts and studies are being developed. Our colleagues in radiotherapy and chemotherapy at both of our medical schools are in the forefront of the improvements in lymphoma therapy and it might be advantageous to both our patients and ourselves to include all our patients in their therapeutic trials. This is one area in the treatment of cancer where recent progress has been made, but current investigations still require additional clinical material to refine the ideal approach to treatment.

THE EDITORS

Diagnostic Laboratory Medicine....

MARGARET BROWN, M.D.

The Laboratory Diagnosis of Tularemia

Francisella tularensis or *Pasteurella tularensis,* as it was formerly known, is a small, markedly pleomorphic, nonmotile gram-negative rod which may be encapsulated *in vivo.* The organism derives its name from Tulare County, California, where it was first isolated from infected squirrels by McCoy and Chapin in 1911.

Tularemia is a disease primarily of rabbits, other rodents, and birds. It is transmitted from animal to animal by flies, lice, ticks, and mosquitoes. The dog tick, *Dermacentor variabilis,* the wood tick, *Dermacentor andersoni,* and the lone star tick, *Amblyomma americanum,* are chief among these vectors in maintaining the disease in the animal population.[3] Man appears to be an accidental host, most often acquiring the disease from handling infected animals, although water-borne cases have been described.[1]

In Virginia, 167 human cases have been reported from 1958-1968. A seasonal variation occurs with the greatest number of cases found in December and January, corresponding roughly to rabbit hunting season. The clinical findings of a case diagnosed at the Medical College of Virginia will be reported below.

A 60-year old Negro male farmer was admitted to the Medical College of Virginia Hospitals in May, 1969, with a two-day history of nausea, vomiting, headache, and weakness. He had a history of tick bite, but no known animal contact. His physical examination revealed a confused patient with: temperature 105°F., pulse rate 110/min., blood pressure 110/70, respiration rate 48/min. There were râles and coarse rhonchi in the left anterior chest; his liver edge was 2-3 cm. below the right costal margin. There was also a 4 x 1 cm. umbilicated, crusted lesion over his right biceps, with right axillary adenopathy.

The admission laboratory results: total white blood cell count (WBC) 6,300/cu. mm. with 93% polymorphonuclear leukocytes, hemoglobin 11.4 gm., blood urea nitrogen 35 mg%. Urinalysis: occasional white and red blood cells, positive albumin.

On the 13th hospital day, blood cultures drawn on admission grew *F. tularensis.*

A summary of the serum agglutination titers appears in Table 1.

TABLE I

Day after Admission	*Agglutination Titers*			
	OX19	OX2	*B. abortus*	*F. tularensis*
1	Neg	160	Neg	Neg
6	Neg	40	Neg	Neg
13	Neg	80	ND*	Neg
22	Neg	160	Neg	320
32	Neg	ND*	ND*	1280

*ND=Not Done

The patient became afebrile after therapy with chloramphenicol, but he became anuric two days after admission. He improved gradually with appropriate supportive care.

General Comments on the Laboratory Diagnosis of Tularemia

The diagnosis of tularemia can be confirmed in the laboratory in two ways, isolating the organism and/or detecting a rise in titer of specific antibody in the serum.

F. tularensis is a strict aerobe and is isolated only on media containing cysteine, growth usually appears after a 24-48-hour incubation period. The organisms will *not* multiply on plain agar media. Therefore, when considering the diagnosis of tularemia, a specific request should be indicated on the

laboratory form. Blood specimens are most frequently positive if taken during the first 7-10 days of the illness.[4]

Agglutination tests are of great aid in confirming the diagnosis of tularemia, but are rarely of help in making an early diagnosis of the disease. Detection of serum antibody is frequently delayed, occurring two to three weeks after the onset of clinical symptoms so that a three-week sample should be collected to be compared with the acute phase serum.

The highest dilution of serum that exhibits 2+ agglutination is designated as the titer. Serum agglutinins with titers of 1:80 or 1:160 usually appear during the second week of illness, reach maximum titers of 1:320-1:10,240 during the fourth to seventh weeks and drop at the end of one year. This is well illustrated in the case described above. Residual titers may persist for 18 or more years.

A twofold or fourfold rise in titer over 7-10 days is frequently diagnostic.[5] Cross-agglutination reactions with *Brucella abortus* and *Proteus vulgaris* (OX19 and OX2) may occur; simultaneous tests with these antigens should be done.[3] A negative test does not exclude infection.[5]

A modification of this agglutination reaction has been proposed in order to shorten the incubation time needed in the laboratory.[6] This procedure has not yet been fully evaluated at the Medical College of Virginia Laboratory and is not currently being used here. There is also a precipitin test available, but it is not widely used at present.[4]

Some interesting laboratory findings in this disease are marked changes in serum lipids of rabbits, with triglyceride, cholesterol, and free fatty acid levels all grossly elevated.[7] In man, there are reports of a progressive rise in the neutrophile alkaline phosphatase index with a peak 5 days after the day of maximum fever, while the peripheral WBC rarely exceeds 10,000/mm^3. It should be pointed out that Feigin[9] has described a pronounced fall in whole blood amino acids in man 12-60 hours following aerosol exposure to *F. tularensis*. This event occurs prior to onset of fever, or other clinical signs of illness.[9]

In regard to prevention, both killed and attenuated vaccines have been used for the prophylaxis of tularemia. However, humoral antibodies do not correlate well with resistance to infection or disease following aerosol challenge.[10] Significant immunity appears to develop only after natural infection or vaccination with an attenuated strain.[11]

Following aerosol exposure or percutaneous injection of living, avirulent organisms, detectable hemagglutinating antibodies may be found in nasal secretions. These antibodies are of the IgA class, whereas the serum antibodies are of the IgM (19s) type. Both of these antibodies appear at four to seven days.[11]

Serum antibody titers in vaccinated individuals are lower than in those who have had natural infection, at comparable times.[11]

Cellular immunity may be of importance in modifying the disease. Macrophages from rabbits immunized against *F. tularensis* showed a significant decrease in intramacrophage bacterial growth and macrophage death when compared to macrophages of nonimmunized animals.[10]

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Division of Clinical Pathology
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Richmond, Virginia

AMA Reports on Practice in Small Communities

A random sample of 2,468 physicians practicing in U.S. nonmetropolitan areas was surveyed by the American Medical Association. The findings are published in *Public Health Reports,* Vol. 85. Compiled by Bond L. Bible, Ph.D., secretary of the AMA Council on Rural Health, the responses of 1,853 physicians indicated:

- The majority of smalltown practitioners and their wives had smalltown backgrounds; similarly, physicians in communities of 25,000 or more generally were reared in comparably sized cities;
- Influences on choice of practice sites were "best opening", geographic preferences, family and friends, leads from colleagues or others, nearby place of internship, and assistance from AMA and medical society placement services;
- 58 per cent were engaged in solo or individual practice, 17 per cent in group practice, and 25 per cent in various combinations of group practice, partnership and salary arrangements;
- Rural physicians prefer the slow pace, closer social ties, and greater outdoor recreational opportunities, and
- Share concern over access to continuing education programs, opportunities for professional growth, hours of practice, available facilities and personnel, and emergency services, especially in isolated rural counties.

Copies of the survey are available from the AMA Department of Community Health, 535 North Dearborn Street, Chicago, Ill. 60610.

Mental Health . . . .

JULIAN C. HOUSEMAN

The New Law for Involuntary Admission to State Mental Hospitals

Medical advice will be a required basic ingredient for sending persons involuntarily to Virginia's mental hospitals, a new amendment to the Mental Health Laws stipulates. This requirement goes into effect in late June.

In amending the mental hospital admission procedures, the General Assembly held inviolate the voluntary admission, which was written into the recodification of 1968. Under this law, any person desiring treatment for mental illness may appear at the hospital serving his geographic area and request admission. Since this voluntary admission procedure went into effect October 1, 1968, such admissions have continued to increase and such was the purpose of its adoption.

In rewriting the admission procedures, the medical certification and the judicial certification were lumped together, this now providing two methods of certification. They are now labeled "voluntary admission" which was not changed and "involuntary admission", which represents the amendments of the 1970 legislature.

The involuntary admission procedures requires a judicial officer, a lawyer representing the person before the bar and a physician. Both a physician and a clinical psychologist may be used but the latter is not required.

The judicial officer may, in place of oral testimony, accept written certification from the physician or a physician and a clinical psychologist, if an examination has been made fifteen days prior to the hearing. Such written certification is not admissible if the person before the bar or his attorney objects to such evidence.

The change also alters the prescribed fees. The old law provides for $50 a day for professional services each for the physician and the clinical psychologist, if both were used. Those close to such proceedings felt this was too high for one case and too little if they handled several cases in a day.

The new fee will be $25 for each case and this is the same fee that is already allowed for the judicial officer and the lawyer.

HOUSEMAN, JULIAN C., *Information Director, Department of Mental Hygiene and Hospitals.*

Approved for publication by the Commissioner, Department of Mental Hygiene and Hospitals.

Woman's Auxiliary....

AMA Auxiliary to Hold 47th Annual Convention

A cordial invitation is extended to all members of the Woman's Auxiliary to the American Medical Association, their guests, the wives of the AMA delegates, alternates and international guests and guests of physicians attending the AMA convention, to participate in all social functions and to attend the general meetings of the Auxiliary.

MRS. JOHN M. CHENAULT, *President*

Chicago—

Woman's role through the ages will be portrayed in fashion for the more than 2,000 physicians' wives expected to attend the 47th annual convention of the Woman's Auxiliary to the American Medical Association, June 21-25, at the Drake Hotel in Chicago. The unique pageant of fashion down through the ages with original and authentic reproduction of costumes and hair styles, make-up, jewelry and accessories from different countries of the world will be the highlight of the June 23 luncheon honoring national past presidents and honorary members. The program is being presented by the sponsors of the Kenosha, Wisconsin, Community Homemakers Home Health Aid Service, Inc.

Features of the four-day meeting include speakers on "Prescription For Better Living"; presentation of the American Medical Association Education and Research Foundation (AMA-ERF) awards; and a "Show and Tell" of slides and exhibits demonstrating outstanding community service projects of local auxiliaries.

On June 20, the Board of Directors will meet at 9:00 A.M. at the Drake. The auxiliary registration and hospitality room will officially open at 11:00 A.M. on June 21, and will close on Wednesday at 1:00 P.M. The auxiliary will sponsor a reception honoring the president Mrs. John M. Chenault of Decatur, Alabama, and president-elect Mrs. R. C. L. Robertson of Houston, Texas, on June 21.

The convention will formally open at 9:00 A.M., June 22. Mrs. Louise Bushnell, Director of Women's Activities for the National Association of Manufacturers, will deliver the keynote address, "Challenge to Women in the '70s". Gerald D. Dorman, M.D., AMA president, will be the guest speaker at the luncheon honoring AMA officers, trustees and wives. Dr. Dorman's topic is "What Is So Rare As This Day In June?" AMA-ERF awards will be presented by Dr. Robert C. Long, M.D., AMA-ERF president.

"Rx for Better Living" will be the highlight of the post-convention conference for state presidents and presidents-elect. Fred L. Allman Jr., M.D., of Atlanta, Georgia, member of the AMA's Committee on Exercise and Physical Fitness, will discuss "Why Physical Fitness?" Former U.S. Olympic Figure Skating gold medal winner Tenley Albright, M.D., of Boston, Massachusetts, will express "The Woman's Viewpoint". A question and answer session will follow.

MRS. HANS J. KLAPPROTH, *Publicity*

Editorial....

The CBS and Nationalized Medicine

ON APRIL 20, and again on April 21, the Columbia Broadcasting System presented hour-long televised documentaries captioned "The Promise and the Practice" and "Don't Get Sick in America". The chief spokesman for socialized medicine in these vicious and slanted programs was commentator Daniel Schorr. He emphasized only the negative in dealing with present day health problems and at no time did he intimate that the American Medical Association or the National Medical Association, as well as their many state and local subdivisions, have endeavored to overcome the very problems which he belabored at such great length.

A "professor" Rashi Fein of Harvard—his field of endeavor was never specified but he repeatedly pronounced "learned" as "learnt"—trotted out all the old hackneyed phrases about the virtues of state medicine. A well coached stable of former officers of hospital associations, Blue Cross and related ancillary medical organizations along with administrators of hospitals and "welfare workers" were interrogated. They all had one common denominator—an intense dislike for the present system of medicine. They paused once to take a gratuitous slap at President Nixon. Schorr had kind words to say about the Kaiser Health Plan. It seemed to Schorr that almost any kind of compulsory national health would be superior to the current American system. The fact that this nation is generally conceded throughout the free world to be the outstanding center of medical knowledge was not mentioned in either program.

President Gerald D. Dorman of the AMA was quizzed briefly. His cheeks were ruddy and came through well on TV. He gave the impression of a sincere and earnest man but his role in the interview did not appear to have been rehearsed. Perhaps a longer interview by him had been sharply edited. He seemed tired and conceded that the young liberals will probably take over American medicine within the next five years.

At no time was there any reference to the underlying labor costs that have sent hospital expenses spiraling upward. There also was no mention that physicians, along with everyone else in this country, have been subject to inflation brought about by the excessive wage increases demanded by labor and acquiesced in by subservient and beholden politicians during the past decade. The philosophy and the mentality dis-

played throughout the entire program was epitomized by the statement that "inasmuch as civilians control the military, civilians should also control the medical profession".

The question naturally arises as to what organization prompted this attack on medicine. The TV sponsors included AT&T, Johnson's Wax, Procter and Gamble, Playtex Girdles, Coca-Cola and Westinghouse. This heterogeneous group desired and doubtless obtained a large audience but it would seem unlikely that these organizations have any special zeal in undermining American medicine. Their interests, in all probability, did not extend beyond their usual desire for the ubiquitous fast buck. The CBS is sufficiently far to the left to relish such a program but in all likelihood this was initiated elsewhere.

A recent article in *The Wall Street Journal* opened with a reference to "a small band of crusaders" that has begun "a long-range, uphill drive to get the Federal government to pay everyone's medical bills". This group, "established by United Auto Workers President Walter Reuther* as the Committee for National Health Insurance, is part of a lobbying force forming to push for blanket medical coverage for all Americans—even more complete than the protection that Medicare now gives the elderly."

The article further states "the backers range from actor E. G. Marshall to heart surgeon Michael DeBakey. They have already won a few firm friends on Capitol Hill. The most important, Sen. Ted Kennedy, is now drafting a universal health insurance bill and is planning to talk up the idea in his Massachusetts re-election campaign this year." In all probability our hidden enemies can be found in this group and we doubtless shall know more about it in the near future.

Tell them again, Spiro!

H. J. W.

* Walter Reuther was killed in an airplane crash on May 10.

News ....

Calendar of Events

Seaboard Medical Association—Nags Head, North Carolina—June 18-21, 1970.

American Medical Association—Annual Convention—Chicago—June 21-25, 1970.

American Medical Society on Alcoholism—Annual Meeting—Chicago—June 23-24, 1970.

Continuing Education Conference on Reproductive Crises—Presented by University of Virginia Departments of Psychiatry and OB-GYN—Charlottesville—June 26, 1970.

Annual Meeting—Blue Shield of Virginia—Cascades Conference Center—Williamsburg—July 10, 1970.

Medical Aspects of Sports Conference—Sponsored by The Medical Society of Virginia and Virginia High School League—University Hall, Charlottesville—Saturday evening, July 25, and Sunday, July 26, 1970.

Flying Physicians Association—Annual Meeting—Bay Shore Inn—Vancouver, British Columbia—August 23-28, 1970.

American Electroencephalographic Society—Continuation Educational Course on "Current Practice of Clinical Electroencephalography"—Washington, D. C.—September 14-16, 1970.

Virginia Nursing Home Association—Annual Meeting—Hotel John Marshall—Richmond—September 15-17, 1970.

National Congress on Medical Ethics—Sponsored by Judicial Council of American Medical Association—Ambassador West Hotel—Chicago—September 19-20, 1970.

The Medical Society of Virginia—Annual Meeting—Hotel John Marshall—Richmond—October 11-14, 1970.

American Cancer Society, Virginia Division—Annual Meeting—Hotel Jefferson—Richmond—October 21-22, 1970.

Virginia Hospital Association—Annual Meeting—The Homestead—Hot Springs—November 12-13, 1970.

Southern Medical Association—Annual Meeting—Dallas, Texas—November 16-19, 1970.

* * * * *

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following new members were received into The Medical Society of Virginia during the month of April:

Edward G. Allen, M.D., Clifton Forge
William Moran Chadduck, M.D., Danville
Ronald Kenneth Davis, M.D., Richmond
Benjamin M. Goodman, Jr., M.D., Franklin
David Paul Gormley, M.D., Springfield
Freeman Wesley Jenrette, M.D., Bedford
Jeanne Blair Johnson, M.D., Richlands
Michael James Kornhauser, M.D., Fairfax
Amy Louise Kuhn, M.D., Arlington
David Lloyd Lanter, M.D., McLean
Jacques Frederick Leiger, M.D., Newport News
Paul Randolph McNeer, M.D., Richmond
Stephen Michael Sonnenberg, M.D., Alexandria
Talaat Henry Souryal, M.D., Alexandria
William Vernon Tynes, II, M.D., Norfolk
Edite Timermanis Vitols, M.D., Richmond
Mintauts Mickey Vitols, M.D., Richmond
Truman Jerry Wakeman, Jr., M.D., Virginia Beach
Henry George White, Jr., M.D., Winchester
Ronald Joseph Wyles, M.D., Virginia Beach

Dr. Elam C. Toone, Jr.,

Richmond, has been tapped into the Hampden-Sydney College Chapter of Phi Beta Kappa, national scholastic honor society. He was one of two alumni members elected.

Dr. Thomas H. Hunter,

Charlottesville, is the 1970 recipient of the Thomas Jefferson Award given annually to an outstanding member of the University community. The award was presented during Founder's Day ceremonies which marked the 227th birthday of Thomas Jefferson. Dr. Hunter is vice president for medical affairs at the University and has been a member of the faculty since 1953.

Norfolk Area Medical Center Authority.

Dr. R. L. Payne, Jr., Norfolk, and Dr. Arthur A. Kirk, Portsmouth, have been named by the Norfolk City Council to the executive board of the Norfolk Area Medical Center Authority. They succeed Dr. Mason C. Andrews and Dr. John Franklin. Dr. Andrews has been chairman for six years and is a member of the authority's fund-raising campaign to raise $7.5 million locally as a first step in building a medical school.

Dr. John A. Gill,

Richmond, was a panelist at the annual scientific meeting of the American Academy of Facial Plastic and Reconstructive Surgery held at Hollywood Beach, Florida, April 24-26. He was one of three members of a panel on Problems of Medical-Legal Matters.

Dr. James L. Mathis

Has been appointed professor and chairman of the Department of Psychiatry at the Medical College of Virginia, effective June 1st. He has been associate professor of psychiatry at Rutgers Medical School since 1968.

Virginia Obstetrical and Gynecological Society.

Dr. Christopher J. Murphy, Jr., Alexandria, has been elected president of this Society. Dr. Fred T. Given, Jr., Norfolk, is secretary-treasurer.

Dr. Benedict Nagler,

Superintendent of the Lynchburg Training School and Hospital, received a National

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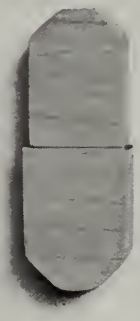
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Brotherhood Award for humanitarian service on June 4th. He will be one of three community leaders thus honored by the Lynchburg Chapter of the National Conference of Christians and Jews. These citations are given for "lifetime devotion to the ideal of the Brotherhood of Man under the Fatherhood of God; devotion and service to one's own religious group and civic service and leadership".

Wanted.

Doctor to share medical offices in excellent location, one or two afternoon a week in Fairfax City, Mosby Building. Suitable for obstetrician, gynecologist, ENT, psychiatrist or dermatologist. Phone (703) 273-3613. (*Adv.*)

Wanted.

Full time staff physician for Student Health Service at Virginia Polytechnic Institute, Blacksburg. For further information, write or call Emory R. Irvin, M.D., Blacksburg 24060. Phone 552-6444. (*Adv.*)

Physicians Wanted

For full time Emergency Room coverage in active 191-bed accredited hospital in the beautiful Shenandoah Valley of Virginia. Guaranteed annual income. Contact Administrator, King's Daughters' Hospital, Staunton, Virginia 24401. (*Adv.*)

Emergency Room Physician.

World's largest resort city seeks full time Emergency Department physician for 190-bed accredited general hospital, providing a minimum guaranteed income expected to be exceeded the first year. This coastal Virginia city offers excellent living conditions and recreational facilities. Contact W. Earl Willis, Administrator, General Hospital of Virginia Beach, Virginia Beach, Virginia. (*Adv.*)

House Physician.

Must be graduate of at least ten years, with ability to use good medical judgment in all phases of medicine, wanted for busy, new General, Medical and Surgical Hospital. One hundred seventy-five beds at present with expansion to be completed January 1971 to 350 beds. Finest facilities, liberal salary. Call collect Administrator, St. Mary's Hospital, Richmond, Virginia, 703-288-3011. (*Adv.*)

Family Physician Critically Needed.

For the town of Shenandoah, Virginia, population 1,900 with 5,000 within a five mile radius. We have no full-time physician now in practice. Incentives are available in regard to office, housing and possibly equipment. For further details, call or write Rev. Jimmy L. Bruce, Box 177, Shenandoah, Virginia 22849. Phone 652-8611. (*Adv.*)

Obituary . . . .

Dr. Charles Hamilton Lupton,

Norfolk, died April 24. He was seventy-seven years of age and received his medical degree from the University of Maryland in 1916. Dr. Lupton practiced in Norfolk for forty-four years before his retirement in 1963. He was a former consultant in surgery at the Norfolk General, King's Daughters Childrens, and Norfolk Community Hospitals. Dr. Lupton served in the Army in World War I and as a surgeon in the Naval Reserve Medical Corps during World War II. He was active in Civic clubs in Norfolk and was a member of many medical organizations, having been a member of The Medical Society of Virginia for fifty years.

Dr. Lupton is survived by his wife, two sons and a daughter.

Dr. William Carey Henderson,

Nassawadox, died April 4, at the age of sixty-nine. He was a graduate of the Medical College of Virginia in 1927. Dr. Henderson was one of two physicians who opened the Northampton-Accomack Memorial Hospital in 1928. He and the late Dr. John Hamilton came to the Eastern Shore from Johnston-Willis Hospital in Richmond to provide surgical and medical services in the new hospital. Dr. Henderson had had very limited training in surgery but acquired his surgical knowledge "through a great deal of reading" and was made a fellows of the American College of Surgeons in 1935. Dr. Henderson was a member of the Masonic Lodge and a member of the Nassawadox Town Council. He had been a member of The Medical Society of Virginia for forty-three years.

His wife and two daughters survive him.

Dr. Edward Watts Gamble, III,

Richmond, died April 16. He was a native of Charlottesville and forty-seven years of age. Dr. Gamble received his medical degree from the University of Virginia in 1948. Before moving to Richmond, he was associate professor of psychiatry at the University of Alabama and later a member of the staff of St. Albans Hospital in Radford. Dr. Gamble had been a member of The Medical Society of Virginia for eleven years.

His wife, two daughters and a son survive him.

Dr. Matthews.

Dr. Robert Matthews, Norfolk, died on March 19, 1970, at the age of 77.

He received his A.B. Degree from Duke University (Trinity College) in 1914 and attended the University of North Carolina. During World War I, he served in the United States Navy. He received his Medical Degree from the University of Pennsylvania in 1920.

He served as Resident Physician and Surgeon at Presbyterian Hospital in Philadelphia, Pennsylvania. He served as Field Medical Director of American Red Cross in Czechoslovakia.

Dr. Matthews practiced General Surgery and Gynecology in Norfolk. He was a member of the Medical Staffs of DePaul and Leigh Memorial Hospitals and President of the Norfolk General Hospital Staff in 1944.

Dr. Matthews was a member of the Norfolk County Medical Society and served faithfully as its President in 1955-56. He was a member of The Medical Society of Virginia, American Medical Association, Seaboard Medical Association, Southern Medical Association and a Fellow of the Southeastern Surgical Congress.

He was a member of the Church of the Good Shepherd (Episcopal), a Mason, a member of the Norfolk German Club, the Norfolk Yacht and Country Club and American Legion Post #35.

He practiced the highest ideals of his profession. He was always friendly and courteous with his colleagues.

He retired from active practice in 1965. The last few years of his life, he suffered from Parkinson Diease.

Dr. Matthews is survived by his wife and two daughters.

Be It Resolved: that a copy of this record be

spread in the minutes of the Norfolk County Medical Society and extend to his widow and children our sincere sympathy.

Be It Further Resolved: that a copy be sent to his family, Norfolk General, DePaul and Leigh Memorial Hospitals and the Virginia Medical Monthly.

Walter P. Adams, M.D.
W. Arthur Porter, M.D.
Mallory S. Andrews, M.D., *Chairman*

Dr. Anderson.

Dr. Samuel Armistead Anderson, Jr., 72 years old, Emeritus Clinical Professor of Pediatrics at the Medical College of Virginia, died March 10, 1970 at his winter home, Captiva Island, Florida. He had been on an outing with his family during the day and appeared to be in his usual state of health. He died in his sleep that night. He had previously had two severe attacks of coronary thrombosis, the last one preceding his retirement in December 1965.

Dr. Anderson was born August 29, 1897, in Martinsville, Virginia. In early infancy he was brought to Richmond and grew up in Richmond. He attended John Marshall High School and later graduated from Washington and Lee University at Lexington, Virginia. While at Washington and Lee he was elected Phi Beta Kappa and Omicron Delta Kappa. Dr. Anderson graduated in medicine at Johns Hopkins University in 1923. He spent the next summer with Sir Wilfred Thomason Grenfell, English physician and medical Missionary, at Labrador. He interned at New Haven Hospital in Connecticut in 1923-1924. He was a house officer at Children's Hospital, Boston, Mass., 1924-1926; interned at St. Louis Children's Hospital, Missouri, in 1926; Chief Resident at Children's Hospital, Philadelphia, Pa., 1926-1927.

Dr. Anderson began private pediatric practice in Richmond in 1928 and served on the faculty of the Medical College of Virginia until his retirement in 1965. At that time he was Clinical Professor of Pediatrics. Following his second attack of coronary thrombosis in 1965 he retired from private practice and discontinued his work at the Medical College of Virginia.

Dr. Anderson was one of the organizers of the Consultation and Evaluation Clinic at MCV and was its first director. In 1969 he received MCV's highest citation as a Distinguished Pediatrician.

Dr. Anderson was a member of the American Medical Association, the Southern Medical Association, the American Academy of Pediatrics, The Medical Society of Virginia, the Virginia Pediatric Society (a former president) and the Richmond Pediatric Society.

He had been a member of the First Presbyterian Church since 1909 and served as a Deacon and an Elder.

Dr. Anderson is survived by his wife, one son, two daughters and ten grandchildren.

Sam Anderson was one of the very best trained pediatricians to start practice in Richmond, with his wealth of knowledge, clinical skill, perfect bedside manner and pleasing personality he soon became outstanding in his chosen specialty. His many faithful patients and devoted friends will feel completely lost with his absence.

We would like to spread this report on the minutes of the Academy of Medicine, send a copy to his beloved wife, and to the Medical College of Virginia's Pediatric Department.

Dr. Basil B. Jones
Dr. James B. Stone
Dr. T. Stanley Meade, *Chairman*

Dr. Weaver.

As physicians, we accept Death as a natural process necessary for the ending of Life. We encounter it frequently and we dedicate our lives to finding ways of postponing the final confrontation as much as humanly possible. But we know that sooner or later, regardless of our efforts, Life does end. The fact that we encounter it fairly often does not seem to dull our sensibilities to its consequences. A loss of a colleague leaves us with grief and a feeling of emptiness that transcends loss of friendship. Such was the case in the recent death of Dr. William Lawrence Weaver.

William Lawrence Weaver, M.D., was born in Front Royal, Virginia, a place he loved dearly, on July 6, 1903, and he entered the public schools there in preparation for entering Randolph-Macon College in Ashland, Virginia. Besides his scholastic achievements at that school, he participated successfully in athletics including football, track, and boxing. He was immensely interested in school affairs of this college and throughout his life he was very proud of his association with that school.

He graduated in Medicine from the Medical College of Virginia and served his internship at the Medical College of Virginia Hospital. Following his internship, he chose Industrial Medicine as his field of practice. After a few years as a Plant Physician, he was promoted to the position of Medical Supervisor at the Textile Fibers Division of the E. I. du Pont de Nemours & Company, Inc. in Richmond, Virginia. He held this position for thirty-five years.

In his field, he worked conscientiously and energetically and soon became a pioneer in occupational medicine. He was a trailblazer in the field of nutri-

tion of industrial workers. He contributed greatly to the understanding and use of vitamins in the diet of industrial workers. His work on the use of Vitamin C in the treatment and prevention of heat exhaustion and in its use in stress diseases was an early contribution in the field of occupational health. His studies and use of vaccines in the prevention of colds and influenza were an outstanding contribution in the field of Preventive Medicine. He was one of the founders of the Academy of Occupational Medicine.

Industrial Medicine is not a field in which grateful appreciation of your efforts is a common reward. The best-intentioned efforts are often watched with suspicion. And yet Dr. Weaver, because of his dedication to duty, his profound sincerity, his self-effacing humility, and his love for his fellow man, made as many close friends in his practice as any other physician in any other field.

He was a devoted husband, a dedicated father and a lovable grandfather. He was a God-fearing man, a Bible student, a deeply religious man, and a great supporter of his church. He was a man with a good sense of humor and he thoroughly enjoyed a joke, especially if it was a joke on himself.

He was a lover of nature, a good fisherman, a lover of antiques, a student of the Civil War, and a true Southerner.

So, Therefore Be It Resolved: That this Richmond Academy of Medicine assembled on this fourteenth day of April, 1970, does state:—To his widow, his two daughters, his grandchildren and all of Dr. Weaver's relatives and friends—that we share with them the deep grief brought about by the loss of our colleague, William Lawrence Weaver. We, too, mourn his demise.

May the omnipotent Lord of the Universe give him his just reward.

Jose D. Coll, M.D.
Burton E. Field, M.D.

Dr. Houff.

Louis Aloysious Houff was born in Clifton Forge, Virginia, graduated from local schools and attended Mt. St. Mary's College, Emmitsburg, Maryland, and Georgetown University. He graduated from Georgetown University School of Medicine in 1929.

He interned at de Paul Hospital, Norfolk, and returned to his home city, Clifton Forge, where he began the practice of medicine in 1930. He was a member of the Staff of the C. & O. Railway Hospital.

Dr. Houff served with the Army Medical Corps during World War II in Northwest Africa and Italy. He held membership in several medical societies as follows: Alleghany-Bath County Medical Society, American Medical Association, Southern Medical Association, The Medical Society of Virginia, A.A.G.P. and Va. A.G.P.

His patients held his sincere interest and he served them well until his death. He will be missed by them and his colleagues.

We extend to his wife and two sons, our heartfelt sympathy.

We moved that these remembrances of his life be included in the minutes of the Alleghany-Bath County Medical Society, and copies be sent to the Virginia Medical Monthly and to his family.

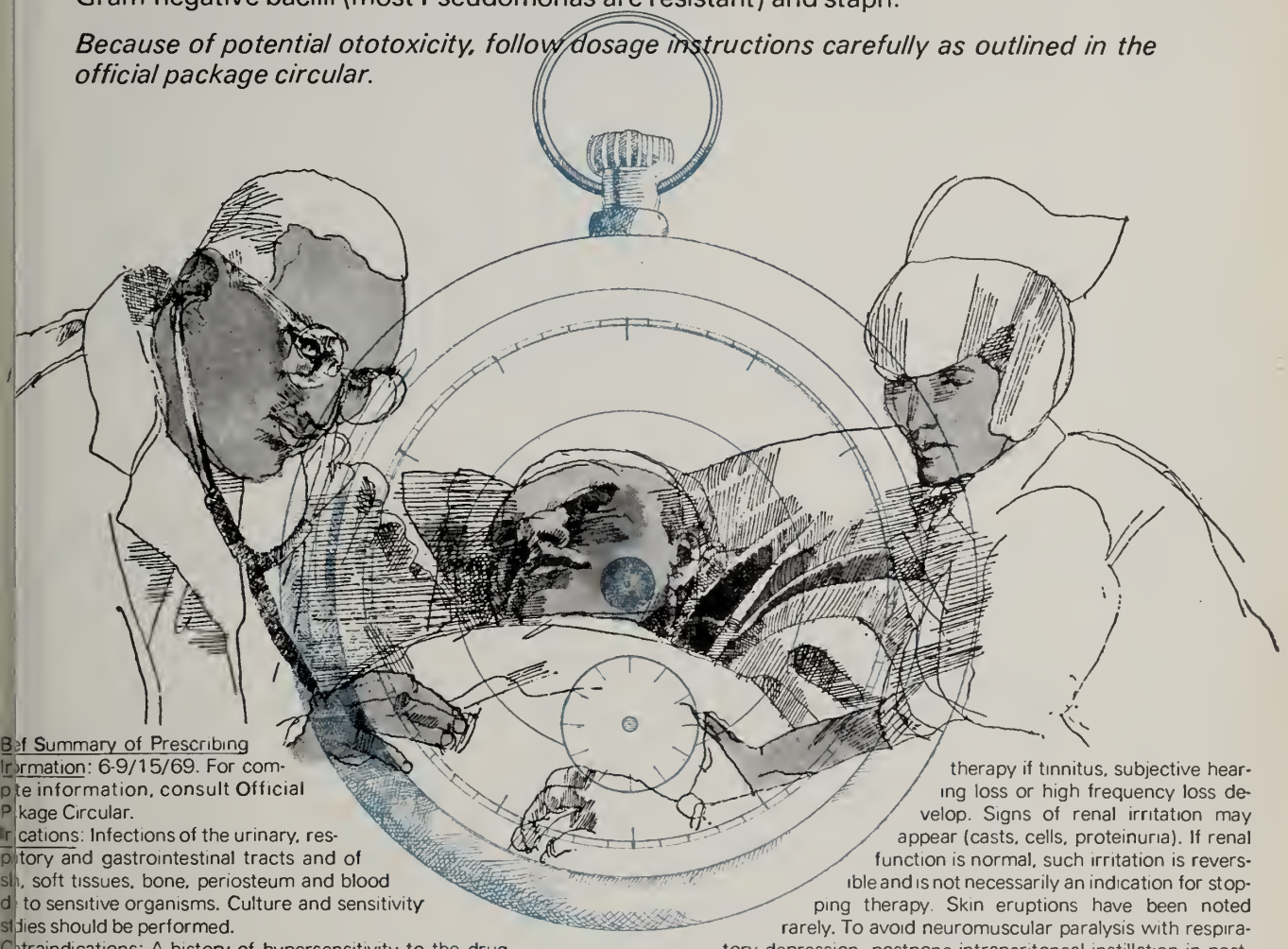
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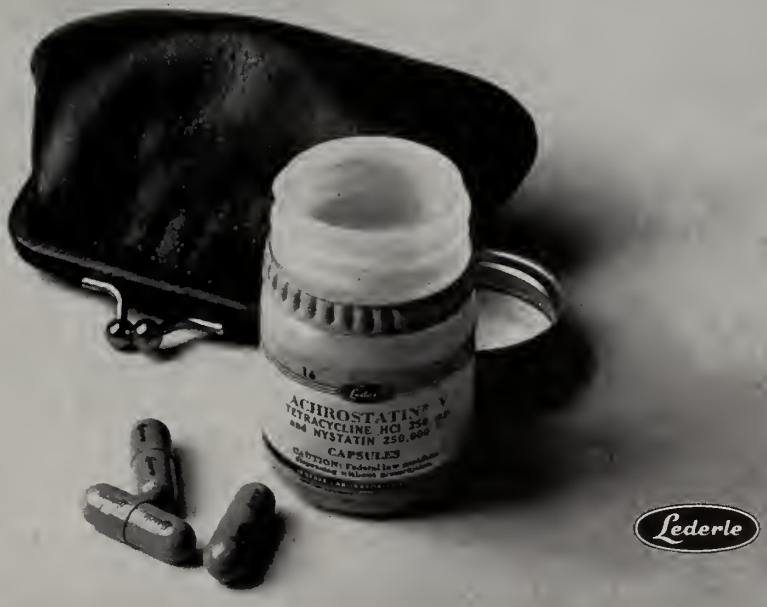


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(sodium levothyroxine)

Indications: SYNTHROID (sodium levothyroxine) is specific re ment therapy for diminished or absent thyroid function re from primary or secondary atrophy of the gland, congenital surgery, excessive radiation, or antithyroid drugs. Indicatic SYNTHROID (sodium levothyroxine) **Tablets** include myxe hypothyroidism without myxedema, hypothyroidism in preg pediatric and geriatric hypothyroidism, hypopituitary hypot ism, simple (non-toxic) goiter, and reproductive disorders assc with hypothyroidism. SYNTHROID (sodium levothyroxine) **In** is indicated in myxedematous coma and other thyroid dysfur where rapid replacement of the hormone is required. Wher tient does not respond to oral therapy, SYNTHROID (sodiur thyroxine) injection may be administered intravenously to av question of poor absorption by either the oral or the intram route.

Precautions: As with other thyroid preparations, an overc may cause diarrhea or cramps, nervousness, tremors, tachy vomiting and continued weight loss. These effects may begi four or five days or may not become apparent for one to three Patients receiving the drug should be observed closely for s thyrotoxicosis. If indications of overdosage appear, disc medication for 2-6 days, then resume at a lower dosage le patients with diabetes mellitus, careful observations should b for changes in insulin or other antidiabetic drug dosage r ments. If hypothyroidism is accompanied by adrenal insufficie Addison's Disease (chronic subcortical insufficiency), Simm Disease (panhypopituitarism) or Cushing's syndrome (hyper alism), these dysfunctions must be corrected prior to and SYNTHROID (sodium levothyroxine) administration. Th should be administered with caution to patients with cardiov disease; development of chest pains or other aggravations diovascular disease requires a reduction in dosage.

Contraindications: Thyrotoxicosis, acute myocardial infarcti

Side effects: The effects of SYNTHROID (sodium levothy therapy are slow in being manifested. Side effects, when t occur, are secondary to increased rates of body metabolism: ing, heart palpitations with or without pain, leg cramps, and loss. Diarrhea, vomiting, and nervousness have also been ob Myxedematous patients with heart disease have died from increases in dosage of thyroid drugs. Careful observation patient during the beginning of any thyroid therapy will al physician to any untoward effects.

In most cases with side effects, a reduction in dosage follo a more gradual adjustment upward will result in a more a indication of the patient's dosage requirements without the a ance of side effects.

Dosage and Administration: The activity of a 0.1 mg. SYNT (sodium levothyroxine) TABLET is equivalent to approximat grain thyroid, U.S.P. Administer SYNTHROID tablets as a daily dose, preferably after breakfast. In hypothyroidism myxedema, the usual initial adult dose is 0.1 mg. daily, and increased by 0.1 mg. every 30 days until proper metabolic bal attained. Clinical evaluation should be made monthly a measurements about every 90 days. Final maintenance dos usually range from 0.2-0.4 mg. daily. In adult myxedema, dose should be 0.025 mg. daily. The dose may be increased mg. after two weeks and to 0.1 mg. at the end of a second two The daily dose may be further increased at two-month inter 0.1 mg. until the optimum maintenance dose is reached (0.1- daily).

Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.15 mg., 0.2 mg., 0.5 mg., scored and color-coded, in bottles of 100 and 50 tion: 500 mcg. lyophilized active ingredient and 10 mg. of M N.F., in 10 ml. single-dose vial, with 5 ml. vial of Sodium C Injection, U.S.P., as a diluent.

SYNTHROID (sodium levothyroxine) INJECTION may be a tered intravenously utilizing 200-400 mcg. of a solution cor 100 mcg. per ml. If significant improvement is not shown the ing day, a repeat injection of 100-200 mcg. may be given.

FLINT LABORATORIES
DIVISION OF TRAVENOL LABORATORIES, INC.
Morton Grove, Illinois 60053



Doctor Watson exposes a double agent

g the Embankment. Two figures emerge into silhouette against a o street lamp. The flare of a match reveals the profile of Sherlock les. As he lights his calabash, his companion speaks:

y ove, Holmes, that amazing intuition of yours has proved right ii What we're looking for is a single entity. I thought we were al g with several others—even twins. But now—I'd say we've cc ered a double agent."

e me more, Watson, and be quick about it!"

a on withdraws a folded paper from inside his greatcoat, and d aloud from it):

h key to the whole cypher is SYNTHROID (sodium levothy- xi e)"...

h ! Watson, not so loud! You'll alert our quarry."

a on continues): "A single entity that serves two functions."

A aster stroke, Watson."

To w along, Holmes. In the neighborhood of 95% of the circulat- g yroid hormone is levothyroxine—T_4 as you call it. T_4 is bound t roxine-binding proteins in the serum. It becomes available only ac ully to tissue cells—as free thyroxine."

"Is that why there's such a smooth, predictable response, Watson?"

"Quite! With agent T_4, SYNTHROID, the chances of a precipitous rise in metabolic rate are lessened."

"But how does 'free' thyroxine fit into the picture?"

"Well, Holmes, you might call it the tissue thyroid hormone—because 'free' thyroxine (that is, thyroxine not bound to protein) is active at the tissue level. It is gradually released from thyroxine-binding proteins. Each daily dose of SYNTHROID is mostly bound to thyroid-binding proteins, and slowly released as 'free' thyroxine—the form in which it is metabolically active."

"Magnificent, Watson! So protein-bound thyroxine is the major form of circulating thyroid hormone, and it is released as 'free' thyroxine. And that's why SYNTHROID is able to simulate the normal process so artfully. Q.E.D."

"Not so fast, Holmes. SYNTHROID works for the *physician*, too. Because its dosage is more precisely controllable, and because response is so smooth and predictable, the *doctor* gets fewer phone calls in the wee hours from agitated patients. Both parties get more sleep!"

"Comforting, my dear doctor, to know that SYNTHROID, the 'single agent,' cleverly does the job of two."

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VIRGINIA MEDICAL MONTHLY

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27 JUL 1970

JULY 1970

OFFICIAL PUBLICATION OF THE
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THE NORFOLK CENTENNIAL AND NORFOLK GENERAL HOSPITAL ISSUE



Equipped for the thyroid emergency?

When an ambulance arrives with the unexpected patient presenting the classical picture of myxedema coma, is your hospital suitably equipped? It is if SYNTHROID® (sodium levothyroxine) injectable is at hand. You are also ready to conveniently handle post-operative thyroid medication situations until oral therapy can be reinstated.

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Levothyroxine has a high binding capacity for serum proteins in contrast to other thyroid medicaments that may contain a thyroactive agent with low binding capacity. *The bound levathyroxine is totally measurable using the serum PBI test. It is not unusual to find PBI levels of 8-10 mcg. per 100 ml. af serum.*

INDICATIONS: SYNTHROID (sodium levothyroxine) INJECTION is specific replacement therapy for diminished or absent thyroid function resulting from primary or secondary atrophy of the gland, congenital defect, surgery, excessive radiation, or antithyroid drugs. It is indicated in myxedematous coma and other thyroid dysfunctions where rapid replacement of the hormone is required. When a patient does not respond to oral therapy, SNYTHROID (sodium levothyroxine) INJECTION may be administered intravenously.

PRECAUTIONS: As with other thyroid preparations, overdose may cause diarrhea or cramps, nervousness, tremors, tachycardia, insomnia and continued weight loss. These effects may become apparent in from 4 days to three weeks. Therefore, patients should be kept under close observation. Medication, in such cases, should be stopped for 2 to 6 days, then resumed at a lower level. In patients with diabetes mellitus, look for possible changes in metabolic activity which may affect insulin or other antidiabetic drug dosage requirements.

CONTRAINDICATIONS: Thyrotoxicosis, acute myocardial infarction.

SIDE EFFECTS: Side effects are secondary to increased rates of body metabolism: sweating, heart palpitations with or without pain, leg cramps, weight loss, diarrhea, vomiting and nervousness. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. In most cases, a reduction in dosage followed by a more gradual adjustment upward will indicate the patient's dosage requirements without the appearance of side effects.

DOSAGE AND ADMINISTRATION: In myxedematous stupor or coma, with no evidence of severe heort disease, 200 to 400 mcg. of SYNTHROID (sodium levothyroxine) INJECTION may be administered intravenously utilizing a solution containing 100 mcg. per ml. Detectable effects are usually observed by the sixth hour after injection and are fully appreciated during the following day. A repeat injection of 100 to 200 mcg. may be given on the second day if significant improvement has not occurred. The intravenous use of sodium levothyroxine in myxedematous coma is advantageous because it produces a predictable increase in the concentration of protein-bound iodine, eliminates the need for multiple doses until oral therapy is reinstated, circumvents the uncertainty of oral absorption, and avoids the risk of pulmonary aspiration.

SUPPLIED: SYNTHROID (sodium levothyroxine) INJECTION is supplied in 10 ml. vials containing 500 mcg. of lyophilized active ingredient and 10 mg. of Mannitol, N.F.; a 5 ml. vial containing Sodium Chloride Injection, U.S.P. is provided as diluent.

Also supplied as SYNTHROID (sodium levothyroxine) TABLET in color coded compressed tablets, ond in seven strengths: 0.025 mg. (orange), 0.05 mg. (white), 0.1 mg. (yellow), 0.15 mg. (violet), 0.2 mg. (pink), 0.3 mg. (green), and 0.5 mg. (blue). Each strength is supplied in bottles of 100 and 500 tablets.

Synthroid®
(sodium levothyroxine, FLINT
Injection

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(1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: NY State Jour. Med., 58:2672-2673, August 1958. (6) Ellis, S. and Spratt, J. S.: JOUR. AMER. GER. SOC., 18:410-415, May 1970.

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then antibiotic therapy last week.

and monilial vergrowth this week.

For many patients on long-term corticosteroid therapy, the addition of oral antibiotic therapy may trigger monilial overgrowth in the intestine. When you anticipate such a problem, take action with DECLOSTATIN 300. It combines the broad-spectrum potency of demethylchlortetracycline with the antifungal effectiveness of nystatin—it helps avoid monilial take-over. Experience has shown DECLOSTATIN to be highly useful for many women patients; individual culture studies will show exactly where this usefulness may best be applied.

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Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

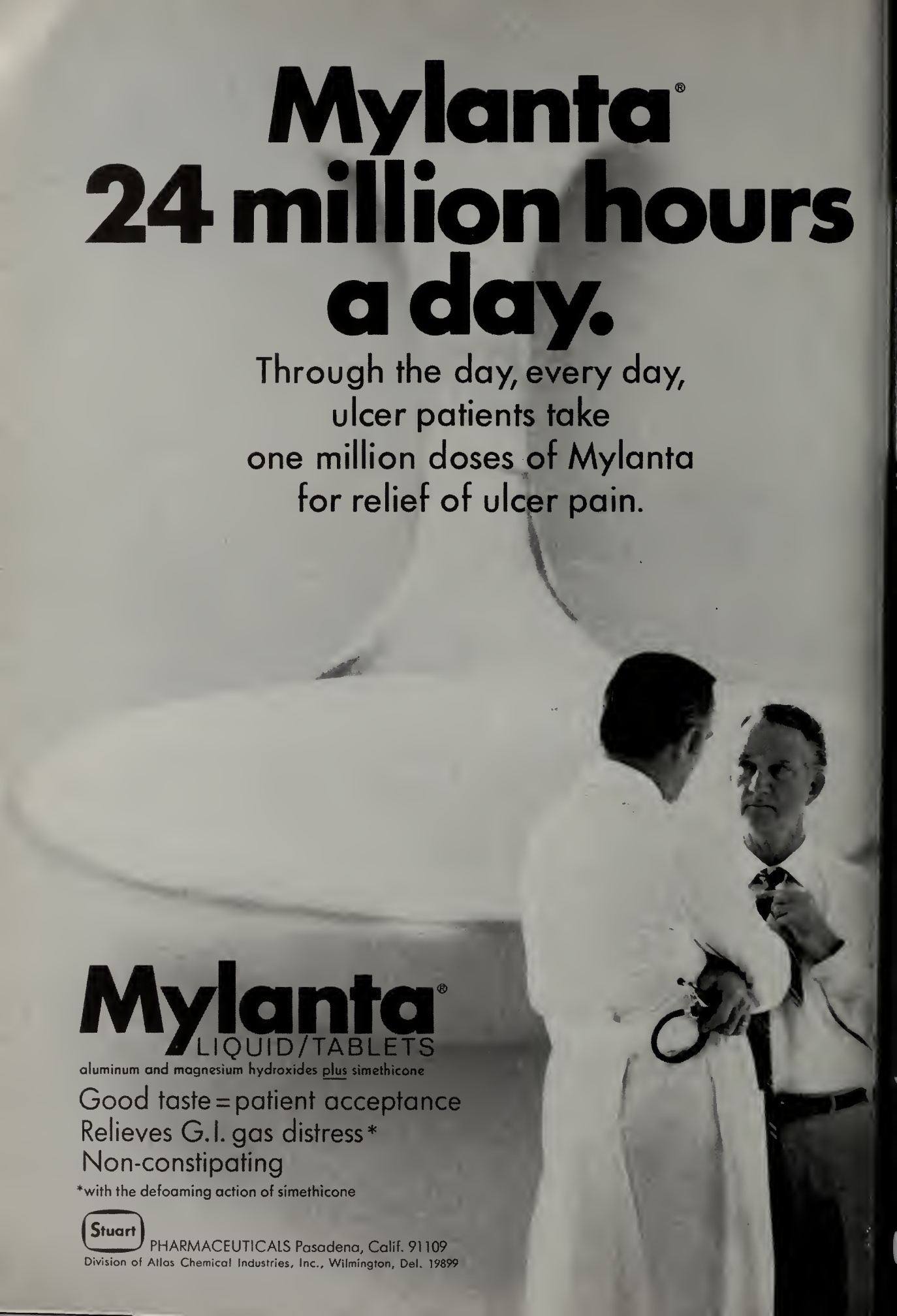
Side Effects. Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

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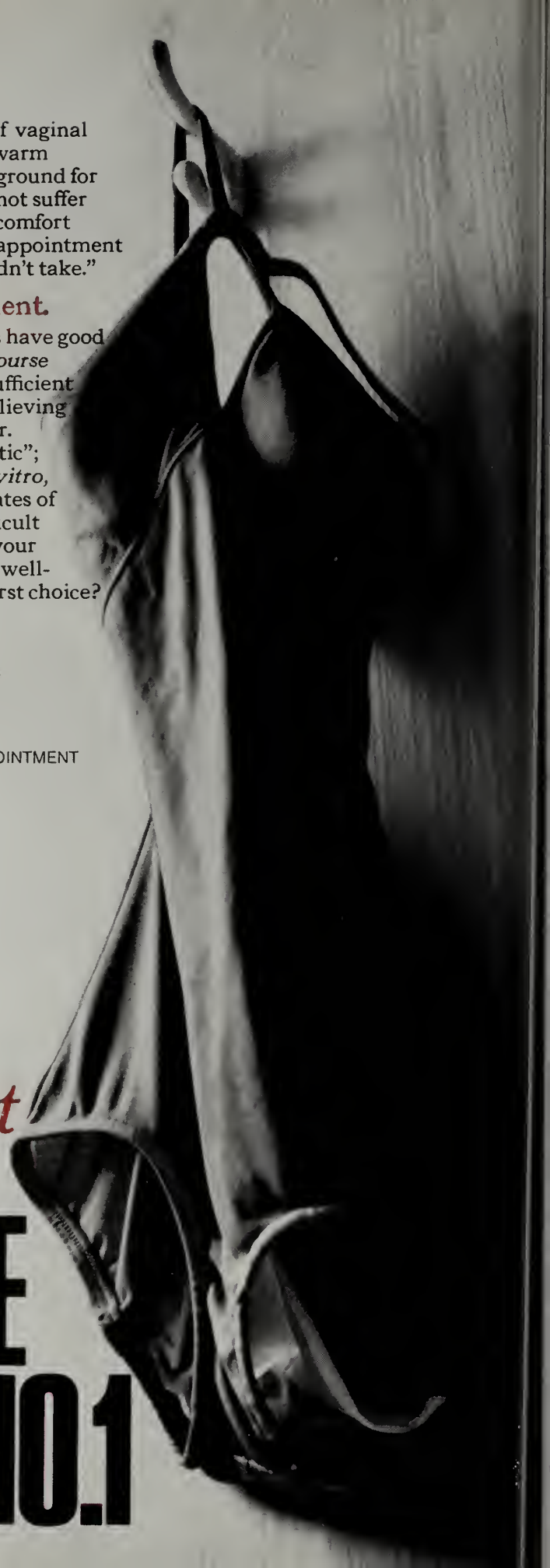
No wonder you see so many more cases of vaginal moniliasis during this season. A damp, warm bathing suit provides a perfect breeding ground for fungal invaders. But your patients need not suffer the pain, the embarrassment and the discomfort of these stubborn infections. Nor the disappointment which comes when they find "the cure didn't take."

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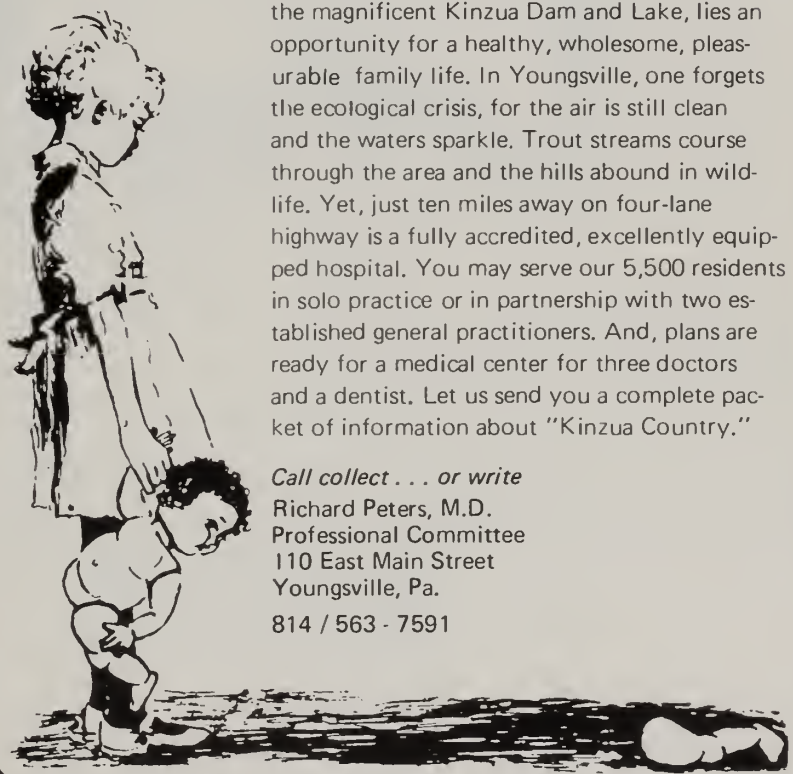
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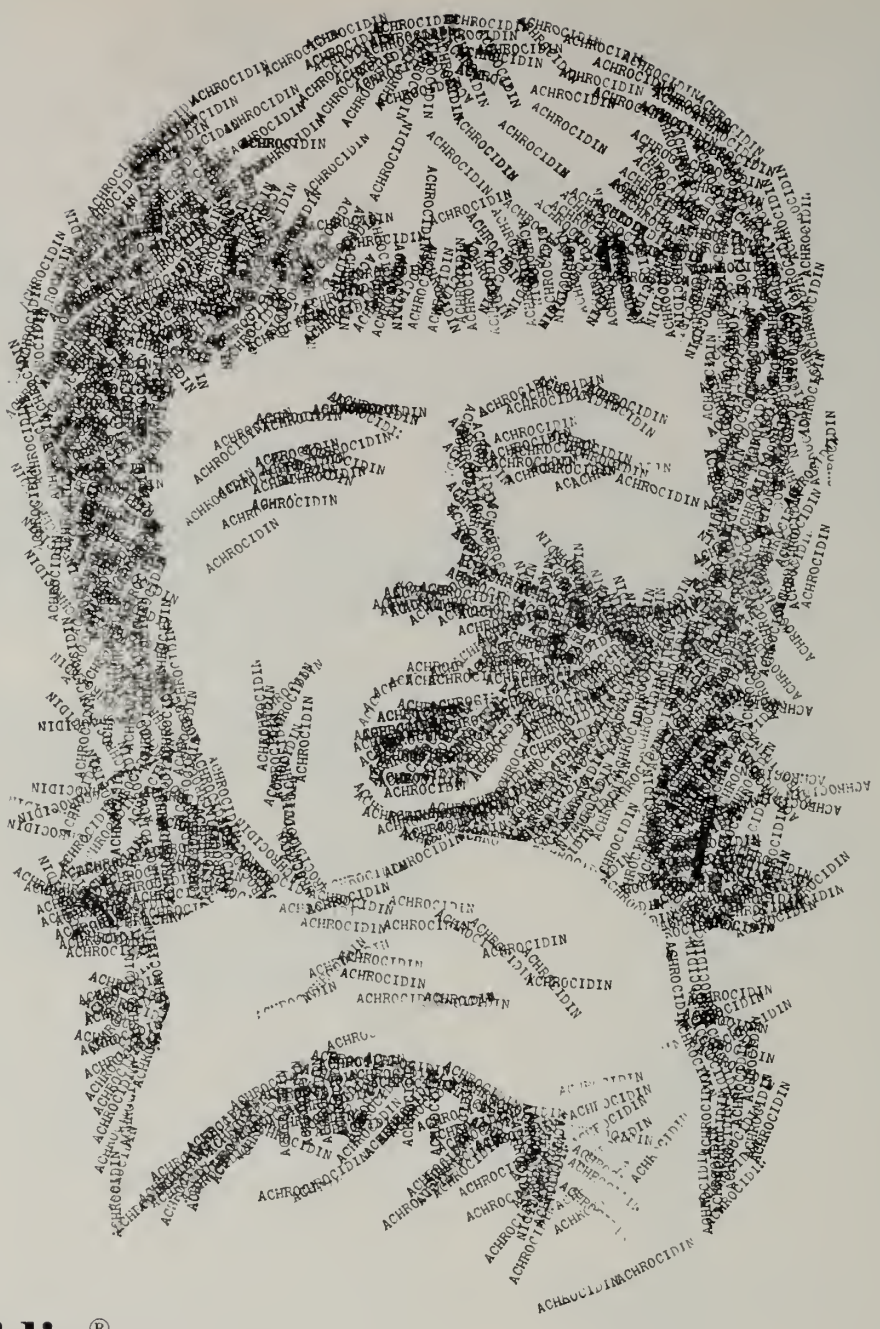
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The Virginia
MEDICAL MONTHLY

July, 1970
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Guest Editorial....

Gonorrhea

Frequently Unrecognized Reservoirs

THE INCIDENCE OF GONORRHEA is rapidly rising and at an accelerated pace in the past few years from 220,191 cases (rate 129.3) in 1958 to 431,380 cases (rate 219.2) in 1968.* Yet there is a surprising complacency about this, yes even an attitude of defeatism that there is nothing we can do about it despite effective treatment.

With the tools and personnel available to us, can we do more? I maintain yes—considerably more. I do not plan to discuss the obvious cases with classical symptoms which are no problems, but rather to confine my remarks to those presently being missed but could be detected.

First and foremost is the large reservoir of gonorrhea that passes through our hands unrecognized and untreated—i.e., a female reservoir having few if any signs or symptoms of gonorrhea and at present already being examined for cancer, for various obstetrical and gynecologic reasons, in family planning clinics and in the private physicians office. With the very little extra effort involved in obtaining a specimen for gonorrhea culture on Thayer-Martin medium the following is our experience over the past year and a half in Norfolk on routine examination of this group of women.

Table 1.

Routine Examination of Female Patients

	No. Cases	No. Positive	Percent Positive
OB-GYN Clinics	2,689	147	5.4
Family Planning Clinic	883	52	5.9
Private Physician #1	1,027	10	.9
Private Physician #2	213	9	4.2
Private Physician #3	105	2	1.9

Thus with very little extra effort 220 unrecognized cases were uncovered and treated. With an average contact index of 1.2 this represents about 450 cases prevented. Economically this phase of our study involved an expenditure of about $700, or about $1.00 per case discovered and prevented. Therefore, routine examination in Ob-Gyn Clinics, family

*Today's VD Control Problem—A.S.H.A. 1969—page 42.

planning clinics and in some private physicians' offices is medically productive and economically sound.

Age breakdown shows that 90% of the cases were concentrated in the 15 to 29 age group.

A second group of patients not usually considered a potential source of infection is the asymptomatic male. In most descriptions of gonorrhea in the male this phase of the disease is ignored, minimized or unrecognized. One must realize that while the symptomatic male patient tends to seek treatment, the asymptomatic male will not unless there is an epidemiologic reason to do so. He therefore remains infectious over a longer period of time than his symptomatic counterpart. The following are our findings:

Table 2.

Incidence of Asymptomatic Infection in Male Contacts

No. Male Contacts	No. Asymptomatic Infections	Percent
600	74	12.3

To uncover this group of patients requires interviewing of female gonorrhea patients for male contacts, a procedure often omitted by clinics and physicians under the false assumption that all males are symptomatic and will seek treatment "on their own". Such an interview takes about 10 minutes per patient and usually yields on the average about two male contacts. To find these 74 patients and to prevent approximately twice the number of infections took about 30 hours of interviewing time spread over one and a half years.

Table 3.

Male Patients Rendered Asymptomatic by Treatment but Still Harboring Organisms Seven or More Days Later

Treatment Schedule	Total Treated	No. Positive	Percent Positive
Aqueous procaine penicillin 2.4 million units	564	24	4.2
Tetracycline 500 mgm I.M. and 2 gms orally	50	3	6.0
Cephaloridine 2 gms. I.M.	199	24	12.0

Admittedly it is almost impossible to determine in an outpatient clinic which asymptomatic male patients are reinfected and which are treatment failures. Under either circumstance the lesson to be learned is that we cannot equate the disappearance of signs and symptoms with cure and that follow-up cultures are essential in the evaluation of cure in the male.

A third significant and frequently unrecognized reservoir of infection is rectal gonorrhea. The following are our results:

Table 4.

Rectal Examination for Gonorrhea in Suspected Homosexuals

No. Examined	No. Infected	Percent Infected
56	31	55.3

Routine Rectal Examination for Gonorrhea in Males

358	29	8.6

Routine Rectal Examination in Femal Contacts

1,181	172	14.6

In this last group there were 33 females who had positive rectal and negative cervical tests. Seventy-five percent of the females with positive rectal cultures admitted rectal exposure giving reasons such as fear of pregnancy, intercourse during "forbidden" stages of pregnancy, desires of the male or female partner, desire for variety in sex technique, error in penetration, etc.

It is interesting to note in most instances rectal infection occurs in the female as the result of heterosexual activity and in the male as the result of homosexual activity.

A less frequent and rarely considered reservoir of infection is that of sexually transmitted gonorrhea in children. I have documented evidence of several such epidemics—the oldest being age nine and the youngest age three. The infection was introduced by an adult—a molester, a baby sitter, a brother, a father and in one instance a grandfather. The disease was then transmitted sexually by the children to their peers.

Finally we hear about pharyngeal gonorrhea. It exists but it remains to be shown whether it constitutes significant focus of spread. In 100 cases admitting orogenital contact in our experience no case of gonorrhea was found although in two instances a non gonococcal Neisseria species was identified.

CONCLUSION

While undoubtedly a blood test if available would be more adaptable for mass screening than the culture for the detection of active gonorrhea, it is felt nevertheless that the culture technique though more troublesome can be a valuable screening device at the present time in potentially high incidence group. I feel that if all the diagnostic methods available today are employed, if the physicians' index of suspicion is increased and the clinical concept of transmissibility widened to recognize the asymptomatic female and male and the rectal area particularly in the female as important foci of infection, we will undoubtedly detect and render noninfectious a significantly greater number of gonorrhea patients than we are doing at the present time. This increased index of suspicion combined with intensified epidemiologic and educational efforts, as well as continued search for and application of better treatment methods may perhaps keep the problem of gonorrhea within bounds until better tests for active infection becomes available.

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403 Medical Tower
Norfolk, Virginia 23507

HARRY PARISER, M.D.

A History of the Norfolk County Medical Society

R. BRYAN GRINNAN, JR., M.D.
Norfolk, Virginia

BY 1870 the completely chaotic situation that must have existed in Norfolk and Virginia after the close of the Civil War had begun to subside and order was reestablished. In January 1870, a new Governor of the State was elected, the Union Army left and the State of Virginia was readmitted to the Union. On May 26, 1870, the city government had recovered from the radical elements and a new city government was formed bringing an air of peace and order to a war disrupted city. It is not surprising then that the medical faculty of the city chose to reform the medical society that had been discontinued by the war.[3]

The organizational meeting was held in Woods Piano Room, Monday evening, June 3, 1870. Committees were appointed to draw up a Constitution and By-Laws and select a place for future meetings. It is important to name the originators of the society. One of these, Dr. Herbert M. Nash, was to remain active until shortly before his death in 1911. Others were obviously influential in holding the society together at times when it might have failed. They were then, besides Dr. H. M. Nash, Drs. William J. Moore, Robert B. Tunstall, Henry B. Ritter, W. L. Broaddus, Richard H. Harris, Joseph B. Whitehead, I. C. Baylor, J. H. Gaskins, George T. Townsend, T. B. Ward, I. W. Leigh, William M. Wilson, James D. Galt, and J. G. Godfrey. It is also indeed significant that many of the descendents of these doctors are still prominent in the affairs of this city. Two physicians not named in the minutes among the founders are Dr. Samuel Selden and Dr. William Selden. The latter was elected first president and therefore must have been a founder. The first vice-president was Dr. William J. Moore, second vice-president, Dr. Robert B. Tunstall. Dr. Henry B. Ritter was elected secretary and Dr. William J. Murray, treasurer.

The society in Norfolk was among the first in Virginia, if not the first, reestablished after the Civil War. It is interesting to quote from "Medicine in Virginia in the Nineteenth Century" by Blanton, "Medical Societies trace their origin to Italy where in 1560 the early 'Scientific Body' in Europe was founded. With the exception of that in 1789 in South Carolina there were no medical societies in the South before 1800." The Stethoscope and Virginia Medical Gazette, a medical journal published in Richmond[2] mentioned in 1851 that there were medical societies in Petersburg, Fredericksburg, Norfolk, Wheeling, and Charlottesville. The Medical Society of Virginia originally founded in 1820 was reformed in Richmond on November 2, 1870, and Dr. William Selden attended as Norfolk's representative. The fourth annual meeting of the State society convened in Norfolk in 1873 as hereinafter related.

Naturally, most of the first year the Norfolk County Medical Society was organized was spent in establishing the Society on a firmer footing and attempts were made to find a permanent meeting place. The Society drew up a code of ethics using the American Medical Association Code as a basis and adopted the "Tariff Charges of 1852 as amended." One hundred copies of the list of the "Tariff of Fees" was ordered printed for distribution. The "Tariff of Fees" is frequently mentioned in the minutes of the society and required many revisions up and down as the years progressed. It was quite obviously a list of charges that the doctors followed closely and from which

they seldom deviated. The list was not attached to the early minutes.

In October 1870, Dr. Harris reported that he had done an autopsy for the City and had charged $25.00 for the performance. Since the City refused to pay for this service, the society contemplated a suit. The outcome was not revealed in the minutes.

Repeatedly mentioned in the minutes was a tax on physicians. This was a separate tax of some sort and it was discussed and worked against politically off and on for many years.

To give some idea of what early medical fees were like, the minutes of March 1871 indicated that $1.50 was a typical charge for giving a vaccination in one's office; between $1.50 and $5.00 was charged for a house visit, a visit to a patient on the wharf or within one mile of the city. The "poor" were not charged at all.

In April 1871, it was suggested that the Society request the City to provide medicine for the poor and establish a city dispensary. At the same meeting the epidemic of cerebrospinal meningitis in the city was discussed and a better method of constructing privies was described.

In September 1871, the Society requested the Governor to appoint a medical man as Coroner. Evidently the Coronor had not been a physician. The Society still had no place to meet and was evidently using the office of Dr. Robert B. Tunstall.

It is, of course, redundant to report in detail the following years. Only selected events of importance and personalities having an impact on the Society and medicine in Norfolk will be chronicled. The multitude of little problems and petty differences will be purposely passed over. One doctor was "ignominiously" discharged from the Society for going off with another man's wife!

The minutes which began with the very first meeting and are complete to this very day are at times replete with minute detail and at other times contain little information. The meetings usually began with a business meeting and then were followed by interesting case reports, clinical problems or problems of public health. Committees on admission, on ethics and on finance were established, and sections on Medicine, Obstetrics and Surgery were formed for the presentation of clinical subjects. With minor revisions these have been continued to the present time. The times of the meetings varied as well as the days. In the early years, the meetings started at 9:30 P.M. in the summer and at 8:30 P.M. in the winter. In 1882 summer meetings were discontinued and while they were attempted from time to time, quorums could not be obtained. Attendance at meetings was an eternal problem as it is today and invariably the same members carried the load through the years.

In September 1873 committees were appointed to make preparations for the coming meeting of the State Society and it was announced that Christ Church could be used as a meeting place. Thirteen members of the society personally raised $430.00 (more was raised later) to defray the expenses of the meeting. The State Society meeting which was held in November 1873 was not reported until April 1874 by the Committee. The church was loaned to the Society free of charge. Mr. John U. Robinson, president of the Old Bay Line, gave the members a free cruise to Old Point where they were evidently entertained by General Barry at Fort Monroe. They were also "hospitably entertained" by Surgeon Bates and the officers of the Naval Ship Yard and on the last night of the meeting, a supper was held at Oliver Hall which everyone seemed to enjoy. They "partied with the guests" until a late hour. The total expenditure came to $459.05 leaving in the hands of the treasurer the sum of $.75.

In November, 1875, the first non-Norfolk resident was elected to membership in the Society, Dr. T. L. Wright from Churchland.

Also, in November a badge of mourning

was mentioned. The type of badge, finally accepted in January 1876, is described in great detail. It was a circular rosette, 2.75 inches in diameter, the back and outer margins of which were fine close quilting, etc. The problem of choosing a design for this badge took up one entire meeting. Upon the death of a member, this badge was worn for thirty days by all doctors. At a later meeting the problem of non-members wearing the badge was deplored.

In January 1878 it was reported that the Masonic Temple had been secured as a meeting place at a rental of $25.00 a year. In February of that year a scheme for a public dispensary was presented. Evidently, previous attempts had been unsuccessful.

An important report was noted in the minutes in March 1883 regarding the yellow fever epidemic of 1855. Dr. R. B. Stephenson of the Naval Hospital discussed the yellow fever epidemics of which there were several. Evidently, there were epidemics of minor proportions until 1821 when the infection was traced directly to the arrival of a vessel from Guadaloupe with the disease on board and from which the bilge was pumped into the harbor. In 1826 and again in 1852 the disease was confined to the business sections of the city. In 1852 there were several hundred cases, the origin of which was probably a vessel called the Tascio from Cuba. It is noted that none were attended by contagion (that is, no one caught the disease directly from those who had it). In 1855, the Ben Franklin came to Norfolk, anchored off of Hospital Point, near the Naval Hospital at the mouth of Scott Creek, and then proceeded to Gosport Naval Yard to unload after twelve days of qaurantine. Contrary to promises, the cargo was broken out and the infection was "directly traceable to this cause". "It spread rapidly in all directions from the berth of the infected vessel." "From this point on the disease spread with the wind." As far as is known, no disease was propagated by those who fled and came down with the disease later. During a dry spell in September, the epidemic subsided. In damp weather in October whole sections of the city were attacked at once. Long pits were dug to bury the dead. The plague fly seemed to follow the disease. No further mention is made about this fly but it was apparently different from the ordinary house fly of which we know. The clinical course of the disease is described in detail and the final suppression of urine was noted as a fatal symptom. Special remedies were discussed and quinine was thought to be useful. Dr. R. B. Tunstall, one of the physicians who lived through the epidemic and whose brother Richard died as a result of it, noted the fact that frequently those who left the city or those who spent only daytime hours, leaving the city at night, escaped the disease.

It is not my plan to report all deaths in this paper but it should be noted that Dr. R. B. Tunstall died April 2, 1883. Dr. Ward died in April 1885 and Dr. William Selden, born in 1808, the first president, died November 8, 1887. All through these notes there is a great preoccupation with death. Called meetings were held immediately, at times within hours, of a member's death to announce it and draw up resolutions. The badge of mourning was, of course, another exhibition of their feeling. The Society would always attend a funeral in a body. In the resolution of Dr. William Shepherd's death (April 1889) it was noted that in no less than six years, ten members of the medical profession in Norfolk and suburbs died and of that number only two had reached the age of three score and ten, while a large majority of them were in their prime of life. From the description of Dr. Shepherd's demise, it must have been caused by a myocardial infarction.

In 1889 the Retreat for the Sick wrote a letter to the Norfolk Medical Society regarding its management. This is the first time the Retreat for the Sick appeared in the minutes. The Retreat for the Sick, established in 1888, was the beginning of the

Norfolk Protestant Hospital, now Norfolk General Hospital, which is Norfolk's largest hospital.

For several years prior to 1890 the Society met in rooms of the Norfolk and Portsmouth Pharmaceutical Association, but in 1890 they were again meeting in the Masonic Temple.

Vital statistics occupied the attention of the Society in September 1890 and resolutions were passed urging the accurate recording of "births and deaths occurring in our rapidly growing city."

A donation of the medical books of Dr. W. J. Moore in October 1891 marked the beginning of our present library. Also those of Dr. William Selden were donated. Both gifts were gratefully received and in January 1892 Dr. Kirkland Ruffin reported on a set of rules established with regard to their use. A list of fines for not returning books on time was posted and it was hoped the sums collected from this would be used to purchase new books.

In 1892 the Society was still without a permanent home and now that there was a library this need was even more urgent. It was finally reported in April 1893 that rooms at 126 Main Street had been obtained, book cases and furniture bought, and the library was moved to its new quarters. Dr. Lomax Gwathmey and Dr. Southgate Leigh were admitted to the Society at that time. Both were to have considerable influence on medicine in Norfolk in the years to come.

In December 1893 an attempt was made to have a so-called black list of persons who could and would not pay their bills. This was discussed during several meetings with no outcome. In January 1894 the cost of furnishing the Society's new rooms was discussed. This was evidently in reference to those rooms shared with the Norfolk and Portsmouth Pharmaceutical Society and the furniture of the Norfolk and Portsmouth Pharmaceutical Society is listed in detail and included one desk, twelve chairs, two spittoons and one carpet.

April 1894 found the Society proposing their own tax to the city government. Surprisingly, it was something like that we now have. This was to be a specific tax of $10.00 plus ½ of 1% on all over $600.00 collected. As well as can be determined, this plan was accepted by the City.

An Emergency Ambulance Service for the aid of the indigent poor and strangers injured or taken seriously ill on the street was proposed in 1894. Also the Ambulance Committee was to arrange for the proper distribution of the cases between St. Vincent's Hospital and the Retreat for the Sick.

The Society's morale was at an all time low in 1895. The president threatened to resign. Meeting after meeting had no quorum. They did elect new officers and appoint new committees in September 1895.

In December 1895, Dr. K. Ruffin moved that a committee be appointed to urge the General Assembly to appropriate more money to defray the expenses of the State Board of Health so it could work more effectively.

In 1897 the Society separated from the Norfolk and Portsmouth Pharmaceutical Society. There was some difference of opinion over expenses, and it is quoted that the "Norfolk and Portsmouth Pharmaceutical Society did not care whether the Norfolk Medical Society was left holding the bag or not." Evidently the matter was resolved but resulted in the Norfolk Medical Society moving its meeting place to 270 Main Street in November 1897.

Dr. Ruffin reported in 1897 that the Charlotte, North Carolina, Medical Journal and the Virginia Medical Monthly would publish the proceedings of the society. The organization of the "Tidewater Medical Association" is reported in January 1898. The name of their association must have been changed as in March a deficit of $40.00 was paid to the Seaboard Medical Association. The minutes indicate that these are the same organization. Early minutes of the Seaboard Medical Association cannot be ob-

tained. In 1969 the 74th meeting of the Seaboard Medical Association was held which would indicate that it was formed in 1895; however, there was no previous mention of this organization in the minutes.

On November 2, 1898, the Society met at 210 Main Street. Dr. Lomax Gwathmey was president, Dr. Charles Grandy, secretary, and Dr. Herbert Old, treasurer. Dr. P. St. L. Moncure was recommended for membership. The Society at this time was evidently reactivated. On December 6th it is noted that twenty-six members were present at the business meeting, many more than usual. The dues were increased to $2.50 a year. The Society was $274.00 in debt so it was decided to reorganize financially, cancel all dues in arrears and accept all those who were willing to pay current dues. Dues were to be paid semi-annually and if a member was delinquent for more than sixty days and refused to pay them on notification, he would be expelled. Also at this time the Constitution and By-Laws were ordered to be rewritten and printed in a booklet.

A smallpox epidemic occurred in Norfolk in 1899. Resolutions were drawn up commending the Board of Health for its efforts in suppressing the disease. There were 900 cases reported. After the epidemic it was reported that syphilis, then referred to as "The Great Pox", was the most difficult disease to differentiate from smallpox. On February 14, 1899, the meeing was postponed until February 28th because of a blizzard.

In June the Society voted to request the Town Council to appropriate money for converting buildings on Craney Island into a Contagious Disease Hospital. This was done and used for this purpose until after 1906. It could not be found in the minutes when the hospital was discontinued. Also at this meeting the Society moved that the Legislature amend the Code of Virginia giving the State Board of Health more power. It is important to note how many recommendations which resulted in improvement of the health care system in Norfolk originated from the Medical Society. As an example, in May 1899 the Society passed resolutions recommending that all cases of tuberculosis be reported to the Board of Health. At the same time, Dr. Grandy read a paper on "The Prevention of the Spread of Tuberculosis in the City of Norfolk". There follows a long list of resolutions recommending the methods for the care and prevention of tuberculosis which in one way or another are followed to this very day with, of course, modifications of the time.

Specialization began to concern the Society in November 1900 and again in December. It is obvious that the Society expected a doctor who announced that he is a specialist to be just that and not to deviate from his specialty.

It came as a surprise to the Society in 1901 that the Norfolk Medical Society was not formally affiliated with the American Medical Association. This revealed the fact that The Medical Society of Virginia did not endorse any local society and that unless members of local societies paid dues to the State Society, they were not then affiliated with the AMA. In going through the minutes it is difficult to determine exactly when the problem was corrected but it appears that it was not until 1913 when Dr. Southgate Leigh was president of the State Society that the Norfolk Society was officially affiliated with The Medical Society of Virginia and the American Medical Association. In the following year, 1914, the Norfolk Medical Society was "reorganized" and named the *Norfolk County Medical Society*. Attempts to change the name of the Society in 1965 when Norfolk County as such ceased to exist were voted down and the name Norfolk County Medical Society was retained.

During the next five to ten years the Society concerned itself with many personal, professional, and public health matters that should be briefly mentioned. In 1902 a banquet was held commemorating the 50th anniversary of the practice of Dr. Herbert

Nash. This was a large oyster roast held at Cape Henry. The Board of Health cooperated with the Medical Society in drawing up a "pure food" act. Dr. Charles Grandy did a great deal toward developing a better medical library. In 1903 a bill regulating Medical Practice was backed by the profession. Also in 1903 the society began to seriously concern itself with the "evils" of contract practice and set down a set of rules regarding what kind of contract practice was or was not ethical. This problem caused discussion and dissension in the profession for years to come and was frequently referred to in the minutes as "this or that doctor was accused of contract practice".

Craney Island continued to be used as an area for quarantine purposes. In 1906 the Federal Government tried to sell it, and again in 1907 against the protests of the Norfolk Medical Society. In 1905 The Medical Society of Virginia met in Norfolk and as late as September 8th the meeting was changed from October 17th to the 24th to avoid conflict with a Horse Show. It is fantastic to think how the change could be made on such short notice for a horse show. This is, of course, an excellent example of the importance of the horse in the society of that day.

In 1906, Dr. Richard C. Cabot addressed the Norfolk medical profession on the Renaissance of Therapeutics.

The Society vigorously backed the AMA's crusade against the advertisement of so called curative nostrums in the lay press. They began at this time, of course, to plan for the Jamestown Exposition of 1907. An invitation was issued to the AMA to meet on the Exposition Grounds and an invitation was also extended to the American X-Ray Society. In June of 1907, Dr. Lynch invited the Society to attend the meeting of the National Association of Military Surgeons held on the Exposition Grounds. Except for these remarks and some concern over the ability of Dr. Sutton to operate a baby incubator, nothing else is said about the Exposition. There is no indication that the AMA met there in 1907.

Plans for a Tuberculosis Hospital were made and outlined in 1908. This was finally located next to what was then called the Alms House, now near Lake Taylor City Hospital.

In 1908 a Smoker was mentioned. This was not so much a Smoker as it was a cocktail party. The Society never had any trouble raising the money for these affairs then or in the years to come. Usually a sum of $75.00 was set aside for such an event. Some of the older members of the society say that mostly beer was drunk at that time.

In 1908 the Society began having four meetings a month on Tuesdays. The first Tuesday was for surgery and gynecology, the second for general business, the third for general medicine and public health, and the fourth for obstetrics and disease of children.

In May 1909, the Committee on Ophthalmia Neonatorum reported on the use of Silver Nitrate solution. It was compulsory that midwives and physicians in charitable institutions use the solution. It could be secured free of charge for charitable institutions.

In 1911 efforts to secure a Pure Water Supply were proposed by Dr. Royster. The cleanliness of the City Marketplace occupied their attention because of the need to protect its food from contamination by dust, flies, dogs, and other agents. In 1916 Dr. Charles Grandy reported that very little progress had been made in improving the sanitary conditions of the Market.

In April 1912 it is worthy of note that Dr. E. C. S. Taliaferro moved to invite Negro physicians to Society meetings, but his proposal was defeated at the May meeting. In November 1954, the word "white" was removed from the wording of the Constitution of the Norfolk County Medical Society and Negroes have been admitted since then.

In 1908 the Board of Control wrote a letter to the Norfolk Medical Society requesting the Society to recommend one or

more of its members to the position of Commissioner of Health. This move almost completely disrupted the organization. The final result was that Dr. Sutton was nominated after what must have been a very stormy session. However, the following year it was done again with no agitation of the profession and became an annual event thereafter. It could not be determined exactly when Dr. Powhatan Schenck was made Commissioner of Health. It may have been in 1910 or 1911 but he was definitely the Commissioner in 1912 and remained so until some time after 1930.

The sale of drugs containing narcotics frequently concerned the society. In April 1915 an ordinance was suggested by the society and evidently adopted. It is much the same as it is today with some important modifications. Paregoric was to be sold in two ounce bottles without prescription; cough medicine was also to be sold without prescription. Soothing syrups containing narcotics required prescription. Preparations containing opiates for external use only could be sold without a prescription. Prescriptions had to be reported to the Health Department if they had the following contents: morphine, 16 grains to one ounce; heroine, 8 grains to one ounce; codeine, 24 grains per ounce; and one ounce of laudenum. These quantities of narcotics would hardly ever be prescribed today.

A form of Group Life Insurance was proposed to the Society in 1917 by the Aetna Life Insurance Company, but was not accepted until a later date. Aetna did write liability insurance for members of the society in 1917.

The years of 1917 and 1918 were important to the medical profession. Many doctors went into the Service at that time, and it is interesting that a method of diversion of fees for the doctors in the Service whose patients were being covered by the remaining physicians was proposed. What became of this policy is not clear in the minutes. The short course of the war did not appear to have worked a great hardship on anyone at that time. During the years immediately following the war many of Norfolk's most prominent physicians came to the City to practice just as they did after World War II.

In 1919 Dr. Southgate Leigh suggested that Norfolk was ripe for a "postgraduate medical school" and as early as 1918 a medical school was considered by Dr. Charles R. Grandy for the Norfolk area in connection with the Atlantic University at Virginia Beach.

In the 1950's discussions began with many physicians who were more seriously concerned about a medical school in Tidewater. As a matter of fact some first heard it mentioned by the Chief of Medicine at the Naval Hospital before 1950. The idea caught on and became crystallized in the minds of some to such an extent that several doctors, chief among whom was Dr. Mason C. Andrews, formed committees with prominent laymen to establish a medical school in the Tidewater area. The advantages of the Norfolk General Hospital area became apparent to some so that the Medical Center was conceived and NAMCA, the Norfolk Area Medical Center Authority, was formed by the State of Virginia for the purpose of establishing a medical school.

The Eastern Virginia Medical School Foundation for handling money raised by a fund raising committee was formed in late 1969 and early 1970. This step is probably the most important move yet made toward establishing an area medical school here and was endorsed whole heartedly by the Norfolk County Medical Society at its January 1970 meeting. The Foundation Trustees composed of some of Tidewater's most prominent citizens and the committee for fund raising headed by former congressman Porter Hardy, Jr., should be successful in reaching this important goal.

In June 1919, Dr. Lockburn B. Scott was elected secretary of the Society and remained so, being re-elected annually, until 1946. Dr. A. B. Hodges took his unexpired

term and Dr. W. P. Adams was then elected secretary for the next four to five years until he became president of the Society in 1951.

In 1921 a librarian was employed to be present daily. This was the first librarian selected for the society. The name of the librarian is not given at that time but Miss E. T. Allen was selected in December 1922. This practice was continued to the present. Also in 1921 the so-called Class I dues were raised to $15.00 a year. A set of resolutions was passed in December 1921 urging the eradication of Bovine Tuberculosis in dairy herds.

In October 1923 the organization of the Woman's Auxiliary to the Norfolk County Medical Society was announced by a letter from Mrs. R. L. Payne, Sr., tendering its good offices to the society. The Ladies Auxiliary hereafter gave annual reports to the Norfolk County Medical Society making many valuable contributions. For some years an annual dance has been organized by the ladies and is still very popular. At the same meeting Dr. L. B. Royster resigned to become the professor of pediatrics at the University of Virginia.

In 1928 smoking was prohibited during sessions of the society.

The exact date that the Norfolk County Medical Society moved into the Medical Arts Building is not clear from the minutes, but it must have been in 1925. They at first occupied a small room and later in 1927, moved to the area on the ninth floor that provided additional space for the library. This room was quite adequate for many years for meetings and for the books and periodicals of the society and provided a comfortable reading room. It was not vacated until 1961 when the society moved the library to the tenth floor of the Medical Tower and new offices were also established. There was not sufficient space in the Medical Tower for meetings. The Public Health Building, completed at approximately the same time, was therefore chosen as a meeting place, and it is used to this day.

From Woods Piano Room in 1870, to doctors' offices, to the Masonic Temple, 126 Main Street, 210 Main Street, 270 Main Street, Atlantic Hotel, Odd Fellows Hall, and Taylor Building, from thence to the Medical Arts Building the doctors had wandered without a home. Numerous committees have been appointed, money raised and set aside for the purpose but all to no avail as the Society still does not have a permanent meeting place that can be called home. Even at present there are those who would like to see the library moved elsewhere from its Medical Tower location. In April 1949 the Building Fund Committee reported that such a small number of the members were interested in building or purchasing a permanent home that the project should be abandoned indefinitely.

In January 1930 the society passed resolutions relative to the lack of support from the City for the care of the indigent sick in the various hospitals and in October 1931 asked for the small sum of $2.00 per day per patient. The urgency of the problem was still being discussed in April 1932. In May 1935 plans to establish the Norfolk Hospital Association for the distribution of the funds for the care of the indigent sick and to determine eligibility were formulated. The Norfolk Hospital Association continued to function until absorbed by the Norfolk Welfare Department in March 1955. Again emphasis should be made that these moves came originally from the medical profession, not the government.

In 1936 a venereal disease clinic was formed through the efforts of the doctors. Originally the anti-tuberculosis clinic also was developed by the medical profession and it, too, is now strictly a service of the Public Health Department.

In 1935, Dr. Walter B. Martin became president of the Norfolk County Medical Society. He was extremely active in efforts to obtain money from the City for the indigent sick, and he helped establish the Norfolk Hospital Association. He became pres-

ident of The Medical Society of Virginia in 1940 and president of the American Medical Association in 1954. He was vice-president of the American College of Physicians in 1953. Dr. Martin was one of three who became president of the AMA from Virginia; the others were Dr. Beverley R. Wellford and Dr. Hunter H. McGuire of Richmond. Dr. Martin was considered one of Norfolk's most distinguished physicians and citizens and in 1955 received the First Citizen Award of the Cosmopolitan Club.

The beginning of the war in Europe in 1939 accelerated the problems of medical practice in Norfolk tremendously. Draft boards were set up and physicians volunteered to make the examinations which were carried on at night. There was a tremendous influx of people into the area, both workers and civilian personnel and their families. Large housing projects sprang up in all directions; one of the areas—Broad Creek Village—housing as many as 10,000 people. Forty-one physicians left practice in Norfolk and were engaged in various activities of the war. Of the many who served in the armed services, only one doctor, Dr. James L. Lea, a dentist, lost his life. The physicians who remained were worked beyond their capacity. The hospitals were expanded. Norfolk General and Leigh Memorial Hospitals each added a wing. St. Vincent's Hospital at Church and Woods Streets was discontinued and a new hospital, the DePaul, was built on Granby Street. Large additions were made to the Naval Hospital in Portsmouth and attempts to set up a system of remunerations for the men going into the Service was again made but as in World War I it came to naught. Following the war large numbers of doctors came to Norfolk to set up practice and really make the nucleus of the medical profession now in this and the surrounding cities.

In the 1950's the Society became more concerned with public health problems not only from a humanitarian point of view but also because of the effect such involvement could have on improving the doctors' image. The Society sponsored an areawide program called "Sabin Oral Sunday" at which time approximately 30,000 citizens received the Salk vaccine. In 1966 a mass tetanus immunization program was carried out by the Society and the Sertoma Club in many of the local schools in Norfolk and Chesapeake.

By February 1962, the activities of the Society became so great and the demands so pressing that an Executive Secretary was employed by the Society. This was also necessitated by the fact that physicians had become so busy in their practices they no longer had time to do the administrative work required to keep the Society in operation. Mr. Robert Versprille was chosen the first Executive Secretary and now we have the gracious and excellent services of Mrs. Marcia Goldman and her secretary, Miss Sandra Hoffman.

Many discussions have taken place through the years regarding proposals for the care of the indigent sick made by the Federal Government and this subject still occupies much of the Society's time and attention. Medicare and Medicaid, now both realities, bid fair to revolutionize medical practice in this country. The areawide comprehensive health planning agency, another example of government involvement in health care, has also finally become a reality after long and heated discussions.

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Jonathan Cowdery—1767-1852

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"IT ONLY TAKES 10 generations to give one 1,024 ancestors," as one of my maternal aunts was fond of saying. The weight of this inverted pyramid of souls and its resulting pot pourri of genes staggers the imagination. So being single and of necessity devoid of progeny, I have always taken a somewhat insouciant attitude toward my forebears. However, when Dr. Charles E. Horton mentioned that he knew of one Dr. Jonathan Cowdery of historical interest it behooved me to delve into the matter.*



Dr. Jonathan Cowdery was born at Sandisfield, Berkshire County, Massachusetts, April 22, 1767, the son of Jabez Cowdery, a physician, and Ruth Wickham. The name Cowdery is of French origin signifying a Hazel tree or grove and his forebears were of English origin.[2] William Cowdery of Weymouth, England, came to America in 1630. Six generations later Jonathan studied at Dartmouth in Hanover, New Hampshire, for two winters and served a quasi-apprenticeship under his father. He married Mary Bryant when he was 22 years old and settled in several places in New England to practice.

In 1800 on January 1st he received a commission signed by President John Adams as a surgeon's mate in the United States Navy.[1]

Dr. Cowdery's first cruise was on the frigate "Philadelphia" commanded by the elder Commodore Decatur in the West Indies against the French. On July 18, 1803, he sailed again on the "Philadelphia" for service in the Mediterranean against the Barbary States, Morocco, Algeria, Tunis, and Tripoli. These lie for 2,000 miles along the northern coast of Africa from Gibraltar to Egypt. They were peopled by the Mohammedans, Moors, Arabs, Berbers, and Turks, who had been engaged in piracy against the Christian nations of Europe and the United States. The captives taken in these raids were held for ransom and their ships plundered. The nations of Europe favored paying tribute to these states and the United States followed suit in concluding a treaty of peace with Algiers (which cost nearly a million dollars in 1796) and also with

*Dr. Cowdery was my father's great grandfather through his daughter Cornelia Wickham Cowdery. My father is Harry Baylor Taylor and is also a physician currently living in Norfolk.

Morocco, Tunis, and Tripoli the same year. However, the piracy continued and in 1801 a squadron of ships was dispatched from Hampton Roads to the Mediterranean to blockade Tripoli and protect American commerce in that area.

Prior to this, Tripoli had been governed by a family of Turks named Caramelli. The Pasha or Bashaw was named Yusef. He had murdered one brother and sent a second named Hamet into exile in Egypt. Yusef feeling that his treaty with the United States afforded him too little money declared war on the United States on May 10, 1801.

On August 24, 1803 the "Philadelphia" arrived at Gibraltar and was sent with the fleet under Commodore Preble, Captained by William Bainbridge, to blockade Tripoli. On October 30 misfortune fell on the vessel and she ran aground on the rocks five miles east of the city while chasing a cruiser. All efforts to back her off failed. After four hours of fighting in this paralyzed position, the flag of the United States was struck and the Moors took possession at sunset. The officers and men were to suffer much tribulation and indignities as prisoners and many were to lose their lives.

It was during this imprisonment that Dr. Jonathan Cowdery kept his diary which he was later to publish in shortened form.[3] The officers were put under house arrest in the home of the American Consul, Mr. Cathart, which commanded a good view of the harbor. The men were sent to the castle which was a gloomy place and kept in poor comfort and subjected to floggings. Dr. Cowdery speaks of visiting the men daily to care for their health and petition for medicines. They were able through the Danish Consul to obtain some money to alleviate their suffering and to send letters home at times. Subsequently, the frigate "Philadelphia" was pulled off its rocks and floated by the Moors. On the night of February 16, 1804, Commodore Decatur entered the bay and in a dangerous and daring feat, his men set fire to the vessel and destroyed her.

A letter from Dr. Cowdery to his father dated November 7, 1804, gives an account of their initial capture and of how he attracted the attention of the Bashaw,[1] "I was asked to become the personal physician to his family and to exercise my profession in his Palace and among his slaves; to relieve the distress of the latter is a pleasure to me. On the 30th of July, he took me from the prison of my brother officers and gave me a pleasant and well furnished apartment in his Palace. I now have liberty to walk about the town when I please and to take short rides into the country on a mule. Occasionally a Turk, who speaks English, is appointed to walk and ride with me and to prevent my running away. He is polite and gives me every attention and I can speak Arabic tolerable well. . . ." The harbour is blockaded by the Americans and there is great scarcity of provisions. The Barshaw demands one million dollars and our government has offered 120 thousand dollars in indemnity for our return. The Bashaw is very cruel to his subjects when he finds them guilty of crimes. For murder and treason he beheads them, for theft he cuts off the left hand and right foot . . . yet he is remarkably fond of his children and kind to the poor. He is a white man about 35 years of age, rather portly and tolerable handsome. He has 2 wives, one white and one black, by the former he has 5 and by the latter 4 children."

Further reading of his diary reveals this entry dated December 15 "at sunset a firing of the batteries announce the commencement of the Mahometan Rhamadan continuing a lunar month in which they neither eat, drink, or smoke while the sun is above the horizon but feast at night."

"January 1, 1804. The Bashaw called me to visit his child about 11 months old. He seemed much affected on my pronouncing the child dangerously ill. January 2nd. Found the Bashaw's child better at which he expressed great satisfaction and offered me a horse and servants to go to his gardens about 2 miles from town. I preferred walk-

ing and took our dragoman with me. I visited the Bashaw's garden ornamented with a great variety of fruits particularly oranges, lemons, and limes. January 15. The month of Rhamadan ended at the change of the moon. Every gun in Tripoli was fired in honor of the day and every Turk put on his best suit. April 15th. We felt the Siroc wind which was very oppressive. May 20th. A party of us under escort walked to the desert 4 miles away. The deserts have a singular and grand appearance. They extend to Mt. Atlas, which we could see at a distance of 2 days journey. On our return we visited several gardens. We were treated to the sap of the date tree which tasted like mead. July 28. I was called to visit the Bashaws eldest son, the Bey. I prescribed for him and was highly entertained. July 29. The Bey was well . . . thanked me for my attention and promised to alleviate our misfortunes. August 3. The American squadron under the command of Commodore Preble attacked Tripoli. I stood on the top of the castle where I had a fair view. August 5. I was ordered to dress the wound of a Mameluke who had his hand shattered. I amputated all his fingers but one, with a dull knife and dressed them in a bungling manner, in hopes of losing my credit as a surgeon in this part of the country. August 9. At 12 o'clock the alarm gun was fired. The Tripolitans took their stations and went through the Mahometan prayer by kneeling and kissing the ground with their faces to the East. Their military maneuvering was a scene of the utmost confusion. I got permission to go to the top of the castle where I had an extensive view. At 1 o'clock the attacked commenced. I saw shells explode and set fire to the town in many places. I beheld the melancholy catastrophe of the explosion of one of our gunboats. The firing ceased at 4:00 p.m. The Bashaw has a bomb proof room in his castle where he stayed during the action. On bearing of the explosion . . . he ventured out . . . with the precaution of having a Marabewt or priest seal a black piece of paper on the top of his head with a Turkish scrawl with assurances that it would secure him from all danger."

"August 11. The Bashaw sent for me. He said that for 2 dollars he could repair all the damage the bombardment did to his town. That what he had been offered was 50 dollars per man for the American prisoners, and that he would make them earn that sum in 2 months. He asked me what I thought my country would give for me. I told him I did not know. He said he would not take 20 thousand dollars for me. To which I replied that I might then expect to remain a prisoner all my life. He patted me on the shoulder and said, I might content myself to stay with him."

"May 14 perceived a note from Captain Bainbridge requesting that I intervene with the Bashaw in regards to ill treatment of the men and officers. I spoke with the Bashaw who replied the war between him and my country was at first about money, but now was about whether he or his brother, Hamet Caramelli, should rule Tripoli. (Hamet in exile in Egypt was bringing forces against him. An expedition from Egypt reached the Tripolitan town of Derne some time later. This was the first time [1805] when American men-in-arms were to operate on foreign soil.) He swore that if the Americans were determined to take Tripoli he would burn to death all American prisoners except me, because I have saved the life of his child. He went off in a great passion and mounted his horse. May 29. The Spanish Consul and several Turks went on board (The American Frigate) and did not return until late at night, when it was reported that negotiations for peace were going on. May 31. The Bashaw sent me to inform Captain Bainbridge that peace was agreed on which I did to the great joy of the officers. June 3, 1805. The articles of peace were signed and salutes fired from all the frigates and batteries. June 6. I bid the Bashaw a final adieu at which he seemed much affected."

This terminated after four years the war with Tripoli. The terms of the peace guaranteed the freedom of prisoners with no tribute in moneys. Decatur returned to the United States as a hero of the nation.

Dr. Cowdery wrote several letters to the Navy Department requesting a promotion! He had pride and sense of fitness for he says that he was the eldest in the lists of surgeon's mates and that younger men had been promoted over him. In one letter dated August 17, 1807, he threatened to resign. Evidently, this worked for he was promoted to the rank of surgeon on November 27, 1807, and ordered to Norfolk, Virginia.

He deprecated family disputes and also had a strong family feeling. A letter to his brother, Elihu, says "he would rather lose a thousand dollars than wrong either of you one cent." However, he expected his brother to manage his affairs shrewdly, i.e., a farm in Orange County, Vermont, and to look out for the raising of his son who was a poor student but could be apprenticed to a trade. He also had a strong religious feeling and writes in this vein to his son, Benjamin Franklin in 1829. "I hope that God has forgiven the many sins of my younger days . . . I am convinced of the truths of Christianity. I feel thankful to God for his many blessings."

In 1808 he wrote his brother that he was to be married to Eliza Reddick of Norfolk, widow of the late Captain Thomas M. Reddick. They had five children, three sons and two daughters. He was based in Norfolk where he lived off and on until his death on November 20, 1852, at the age of 85. He continued in active duty with the Navy until shortly before and at the time of his death held its oldest commission. "Affectionate in his nature, faithful in performance of his duty, and pure in spirit he has left as a patriotic Christian, a character without stain, and an example worthy of emulation." This is written on his tombstone where he is buried in Norfolk, Virginia.

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Lymphangiomas and Cystic Hygromas

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LYMPHANGIOMAS AND CYSTIC HYGROMAS are developmental defects of the lymphatic system which are believed to be the result of an overgrowth of lymphatic vasoformative tissue and not merely static, dilated, normal lymph channels.[1,2] They may range from very small, well localized, "simple" lymphangiomas presenting as a pea-sized nodule on the skin to sometimes massive cystic hygromas which may cover the entire head and neck region.

Etiology

The etiology of lymphangiomas and cystic hygromas is unknown, and it is controversial as to whether they represent true tumors. One theory relates the development of cystic hygroma to an abnormality of the lymphatic budding which normally sprouts from the venous system.[3] Sabin stated that embryologically the lymphatic system develops from offshoots of the venous system, and in cystic hygromas the recanalization with the venous system is never developed.[3] Another view is that the lymphatic system develops from a separate mesodermal origin and secondarily connects with the venous system.[4] Whatever may be the exact origin of the lymphatic system, it is a fact that the cystic hygromas are composed of gross multi-loculated cysts which are endothelium lined. These lymphatic cysts, spaces, and channels do not have a normal connection to the venous system and hence any fluid which is secreted into the cysts has no escape and produces enlargement and dilatation. Goetsche agreed that the fluid in these cysts was derived from endothelial secretion but stated that peripheral extensions into neighboring normal tissues represented true neoplastic growth.[1]

Classification

While there are a number of classifications of the different types of lymphangiomas, the most commonly used one would appear to be that of Landing and Farber who found three basic categories: (1) lymphangioma simplex, (2) cavernous



Fig. 1. Arrows point to a lymphangioma simplex which presented on the forehead of this infant at birth. These lesions are generally smaller, being typically grayish, and only slightly protuberant. The lesion does not tend to increase in size significantly and is treated only for cosmetic improvement.

lymphangioma and (3) cystic hygromas.[5] Lymphangioma simplex are usually small lesions which commonly present as superficial gray areas on the skin, lips, or tongue (Fig. 1). Although cavernous lymphangiomas and cystic hygromas usually act quite differently clinically, it can be difficult to distinguish between these lesions. Clinically, cystic hygromas are not compressible, while cavernous lymphangiomas are.[6] Cavernous lymphangiomas have a high rate of recurrence, while excision of a cystic hygroma usually results in a cure.[7] The cavernous lymphangiomas are frequently seen in the



Fig. 2. (A) This 14-month-old infant was born prematurely and spent the first six months of her life in an incubator. The large cystic hygroma on the right neck increased in size as the baby's weight and general health improved. When the infant was referred to plastic surgery, the mass extended from the parotid region down to the base of the neck.

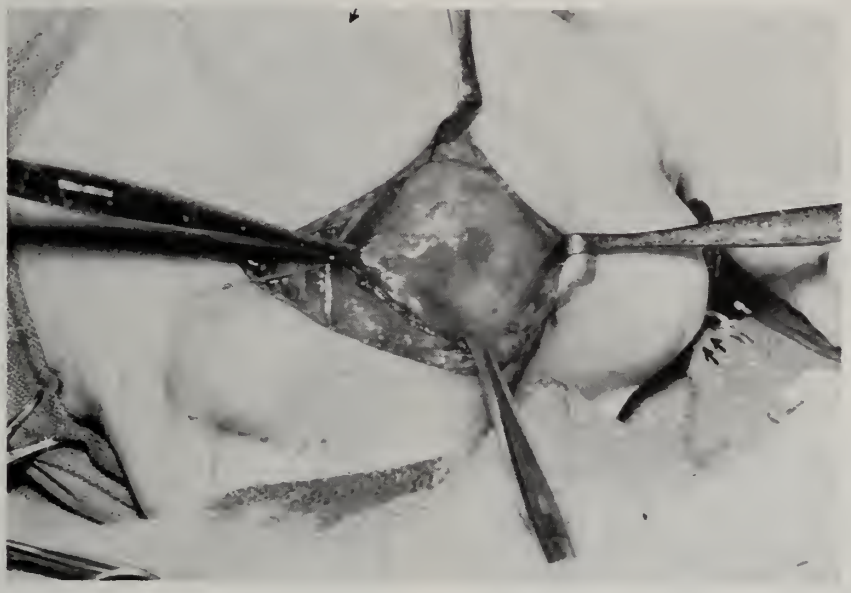
oral cavity, causing diffuse increase in the size of the tongue or the lips, but may also be seen in the extremities, mediastinum, groin, or retroperitoneal areas. Cavernous lymphangiomas may occasionally have elements of a hemangioma within their substance and in this case pathologists have used the criteria of the presence or absence of blood cells within the cysts to distinguish between the two. In those cases where a clear distinction cannot be made between a cavernous lymphangioma and hemangioma, a combination of the two is best referred to as a hemangiolymphangioma.



(B) This right lateral operative view shows the mass extending from the posterior triangle of the neck to the submandibular region and completely filling the entire extent of the right neck.

One interesting concept contends that lymphangiomas and cystic hygromas are basically similar and that their clinical and morphologic differences are related to their anatomic location.[8] In interlocking, nonyielding, muscular tissues, small lymphangiomas develop; while in loose fascial spaces, cystic hygromas develop. Paletta has classified lymphangiomas according to microscopic basis as being either simple or cavernous and also on a clinical basis according

to the region in which the lesion is located such as cutaneous, face, oral, neck, chest, or abdomen and extremities.[9]



(C) This right lateral operating room view shows a transverse incision being opened with the platysma muscle cut in the center. The cystic hygroma is bulging through the incision. The incision will be opened further to provide greater exposure for complete removal of the mass. For orientation, a single arrow points to the lobule of the ear and double arrows to the chin. The patient's face is turned to the reader's right.

Clinical Aspects

Approximately half of the lymphangiomas are present at birth, and it has been stated that 80% will be present at the end of the first year and 90% by the second year.[9] The commonest location is in the neck in the posterior triangle behind the sternocleidomastoid muscle and these are felt to be related to the site of the primitive lymphatic sac.[10] The patient in Fig. 2 (A, B, C, D, E) appeared to have a cystic hygroma arising from the typical location of the primitive jugular lymphatic sac. When cystic hygromas extend anteriorly to the sternocleidomastoid muscle, they frequently present a projection both beneath the mandible externally and intraorally into the floor of the mouth. Cystic hygromas of the neck may actually communicate with lymphangiomas of the axillary compartments. Second most common location for lymphangiomas is in the axilla, and 20% have been reported to originate in this region.[10] Most of the lymphangiomas will be asymptomatic except in the very massive lesions which will cause problems by virtue of their size. Some of the massive neck lesions have been known to extend down into the mediastinum and cause airway problems. Cystic hygromas of the neck and mediastinal regions have been known to become secondarily infected as a result of intraoral or upper respiratory tract infection. This danger is one of the considerations which prompts an attitude toward early surgery in cystic hygromas.

Treatment

In most cases, the recommended surgical treatment should be complete excision. Complete surgical excision will rarely be followed by recurrence.[7,9,10] If the lymphangioma is incompletely excised, a 10-15% recurrence rate has been reported.[10] A recurrence is especially likely if grossly involved tissue or part of the cyst are left behind. It has been stated that cystic hygro-

mas should be removed whenever encountered and that age is no contraindication except in the unhealthy or premature babies.[11] The excision of a large cystic hygroma can be a formidable operation, and it may be safer to keep the high risk infant



(D) This closeup operating room view shows the superior aspect of the dissection. A superficial parotidectomy was done and the facial nerve preserved (pointer). In addition, practically a complete neck dissection was necessary to remove the gross cystic hygroma. None of the essential structures should be sacrificed in removing a cystic hygroma.

under close observation until a healthier weight and larger size are obtained before subjecting the infant to a prolonged operation. Of course, this means that close observation is necessary while waiting for the weight gain so that the lesion does not greatly increase in size. In most cases, the lesions do not increase rapidly in size, and temporizing for a short while is unlikely to cause problems. Spontaneous regression, on the other hand, is not usual for these lesions



(E) Patient is seen six weeks postoperatively.

and should not be considered. Some of the smaller lymphangiomas which present little difficulty in excision may be operated on at any time they are seen. It is not necessary and, in fact, contraindicated to sacrifice normal, important or vital structures when removing cystic hygromas, for this is not a malignant neoplasm. On the other hand, halfhearted removals are not satisfactory. The mortality should be zero for the removal of these lesions. A 2-5% mortality for the very large lesion has been reported, but the authors felt the overall mortality of surgical excision should be negligible.[10] Sclerosing agents, aspiration and irradiation techniques, used and recommended in the past, are not recommended now.[10]

For good technique it is important to emphasize ligation for hemostasis to help decrease the amount of lymphatic drainage. Cautery can be used for some of the smaller superficial bleeders, but a ligature is advis-

able when working around the peripheral extensions of a cystic hygroma. Postoperatively, drains and pressure dressings are useful in obtaining the best results. A postop-



(F) The six-week postoperative, right lateral view shows the healed transverse incision. The prognosis on this child is excellent, as all grossly involved tissue was removed.

erative chest x-ray to check for a pneumothorax should be done after excision of massive neck lesions.

Summary

Etiology and classification of lymphangiomas and cystic hygromas has been discussed. Smaller lesions usually do not present difficult problems in surgical management, but large cystic hygromas require extensive surgery. In the excision of these large lesions, vital structures must not be sacrificed, but as thorough removal as possible should be carried out.

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Carcinoma of the Thyroid

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ON TWO PREVIOUS OCCASIONS[1,2] we have reviewed our experiences with thyroid disease at the Norfolk General Hospital. The first study of 490 thyroidectomies done at this institution pointed out the difficulty in establishing a precise pre-operative diagnosis in thyroid nodules.

The second report combined two series of thyroid operations done 25 years apart and demonstrated the changes in indications for thyroid surgery. A marked decline in surgery for hyperthyroidism with an increase in surgery for non-toxic nodules was demonstrated. There appeared to be an increase in the incidence of thyroid malignancies.

In keeping with these studies a group of thyroid cancers treated at this institution was collected and forms the material for this report.

Thyroid cancer may present a perplexing problem to the physician because of its unpredictable behavior. Proper diagnosis as well as adequate treatment have been and are still subjects of medical and surgical controversy. In the effort to clarify some of these problems we have analyzed 86 microscopically proven carcinomas of the thyroid gland collected from the Tumor Clinic of the Norfolk General Hospital over the last 17 years. This study will attempt to outline the effects of classification, clinical staging, sex, age, and surgical therapy on prognosis and survival.

I. Classification:

In the attempt to make this analysis as brief as possible, we have adopted a simple classification of the thyroid malignancy. (Table 1) Following the suggestion of Woolner[3] and others at the Mayo Clinic, we have grouped the multitude of histologic patterns together wherever possible. Unfortunately, a group of the tumors remained that we could not classify. These were for the most part diagnosed only adenocarcinoma of the thyroid and the slides were not available for review.

TABLE 1

PATHOLOGIC CLASSIFICATION OF THYROID CARCINOMA

I.	Papillary Carcinoma. (53 Cases—62%)
	Papillary and Follicular
	Mixed Follicular and Papillary
	Papillary and Alveolar
	Papilloma—malignant
	Papillary Adenoma—malignant
	Papillary Cystadenoma
	Occult Sclerosing Carcinoma
	Occult Papillary Carcinoma
	Unencapsulated Sclerosing Tumor
	Lateral Aberrant Thyroid—Metastatic
II.	Follicular Carcinoma (20 Cases—23%)
	Fetal Adenomatous Tumor
	Metastasizing Adenoma
	Localized Carcinoma in Follicular Adenoma
	Benign Metastasizing Goiter
	Encapsulated Angio Invasive Carcinoma
	Malignant Adenoma
	Atypical Adenoma
	Adenocarcinoma in an Adenoma
	Hurthle-cell Transformation (A few are papillary carcinomas)
III.	Solid (Medullary) Carcinoma (1 Case—1%)
	Solid Carcinoma with Amyloid Stroma
IV.	Anaplastic Carcinoma (5 Cases—6%)
	Undifferentiated
V.	Not Classified (7 Cases—8%)

Papillary carcinoma of the thyroid was the most common classification given in our series—53 cases or 62%. This group had the lowest mortality—eight deaths or 15% of the cases. Follicular carcinoma occurred in 20 cases or 23% of the total number with a mortality of 35%—over twice the mortality of papillary carcinoma. Anaplastic carcinoma occurred in only five cases—6%, and had a mortality of 60%. The unclassified group consisted of seven cases or 8%

with a mortality of 57% showing that most of these cases were in an advanced stage when diagnosed.

Clinical Stage

The clinical staging of the disease (Table 2) as suggested by Buckwalter[4] is based on

TABLE 2

CARCINOMA OF THYROID

Clinical State of Disease (Buckwalter)	
Stage I.	Neoplasm Limited to Thyroid Gland
State II.	Extension to Regional Lymph Nodes—Delphian, Substernal, Trachael Area
State III.	Extension Beyond Nodes into the Neck or to Bone, Lung, or Other Organ Systems

the gross and microscopic findings at the time of the initial operation. Stage I—neoplasm limited to the thyroid gland; Stage II —extension to regional lynph nodes; Stage III—extension beyond regional nodes into the neck or to the bone, lung or other organ systems.

The mortality rate for the Stage I papillary and follicular carcinomas is 13% and 17% (Table 3) respectively but for the

TABLE 3

EFFECTS OF CLASS AND STAGE OF MORTALITY

CLASS AND STAGE	Total Cases	Deaths	Mortality (%)
Papillary I	30	4	13
Papillary II	17	2	12
Papillary III	6	2	33
Total	53	8	15
Follicular I	6	1	17
Follicular II	5	0	..
Follicular III	9	6	66
Total	20	7	35
Solid—Medullary	1	0	
Anaplastic I	1	0	..
Anaplastic II	0	0	
Anaplastic III	4	3	75
Total	5	3	60
Unclassified I	1	0	
Unclassified II	3	2	66
Unclassified III	3	2	66
Total	7	4	57
Total	86	22	26

Stage III carcinomas the mortality rises to 33% and 66% for papillary and follicular.

Age

To evaluate the effects of age on prognosis (Table 4) we have separated the cases

TABLE 4

CARCINOMA OF THE THYROID
EFFECTS OF AGE ON PROGNOSIS

	AGE			
	7-25	26-64	65-85	Total
CASES	12	64	10	96
Papillary	11	39	3	53
Follicular	1	15	4	20
Medullary	..	1		1
Anaplastic		4	1	5
Unclassified	..	5	2	7
Alive	11	48	5	64
Dead	0	16	5	21
Lost	1	0	0	1
SURVIVAL	100%	67%	50%	67%

into three groups—24 years and under, 65 and over and the middle years of 26-64. The mortality in the three groups shows a striking difference for the young patients—no known deaths from thyroid carcinoma with one patient lost to follow-up. The older age group had a much poorer prognosis. Papillary carcinoma occurred more frequently in the youngest group and there were no anaplastic or unclassified carcinomas in the young group.

Sex

Cancer of the thyroid occurred over three times more often in the female patient (Table 5). The mortality rate of the male

TABLE 5

CARCINOMA OF THYROID
EFFECTS OF SEX ON MORTALITY

SEX	Cases	Deaths	Mortality (%)
Female	68	15	22
Male	18	7	39
Totals	86	22	26

was almost twice that of the female—39% as compared to 22% for females. One-fifth of the papillary carcinomas occurred in males and one-third of follicular malignan-

cies. The tendency appears to be for males to develop the more aggressive types of tumors (Table 6).

TABLE 6

CARCINOMA OF THYROID
Effects of Sex on Mortality

CLASSIFICATION	Female	Male	Total	Mortality (%)
Papillary	44	9	53	15
Follicular	14	6	20	35
Solid-Medullary	1	..	1	..
Anaplastic	3	2	5	60
Unclassified	6	1	7	57
Totals	68	18	86	26

Treatment

To evaluate the effects of surgical therapy on the prognosis of carcinoma of the thyroid (Table 7) the cases were arranged in relation to pathological classification and clinical stages. Of the 86 cases in the series, 64 (74%) are surviving. The papillary carcinomas had by far the highest survival rate —85%, with follicular carcinomas following with 65% still alive. The anaplastic carcinomas and unclassified group had survival rates of only 40% and 43%.

There appeared to be little difference in the survival rates for total thyroidectomy and lobectomy indicating that these procedures when used alone are reserved for the earlier cases. This becomes more apparent when we review the cases separated into the clinical stages (Table 8). No evidence of the superiority of total thyroidectomy over lobectomy is apparent from the study.

There is also little difference in the survival rates between the Stage I and Stage II lesions. The Stage III group had a survival rate of only 43%.

The addition of radical neck dissection in operations for thyroid cancer appears to have been reserved for the more advanced stages in this series. The survival rate following thyroidectomy with radical neck

TABLE 7

SURVIVAL AFTER SURGICAL THERAPY
Based on Pathological Classification

	Papillary Carcinoma	Follicular Carcinoma	Solid Carcinoma	Anaplastic Carcinoma	Unclassified Carcinoma	Survival (%)
Subtotal Thyroidectomy	15/2	7/3	...	4/2	3/2	69
Total Thyroidectomy	9/0	3/1	1/0	...	...	92
Lobectomy	12/1	2/1	...	...	...	85
Thyroidectomy with Radical Neck	16/4	8/2	...	...	2/0	67
Biopsy Only	1/1	...	...	1/1	2/2	..
Totals	53/8	20/7	1/0	5/3	7/4	74
Survivals	85%	65%	....	40%	43%	

dissection in Stage II disease is 86% and in Stage III is 57%.

Summary

Age, sex, pathological classification and clinical staging all play an important role in the prognosis of carcinomas of the thyroid. The best prognosis is early papillary carcinoma in the young female, and the poorer prognosis is the older patient with anaplastic or follicular carcinoma.

In treatment for Stage I disease our survival rates for total thyroidectomy, lobectomy, and subtotal thyroidectomy are about the same. We advocate total lobectomy for the involved thyroid lobe and subtotal lobectomy of the uninvolved side. This would also include removal of the local lymph nodes in order to conclude the staging of the disease. Any visible or palpable jugular nodes should be removed for frozen section. Positive regional nodes indicate Stage II and the positive jugular nodes indicate a Stage III lesion. The presence of positive nodes in the jugular chain would be an indication for the addition of a radical neck dissection.

For Stage II papillary carcinoma we do not routinely advocate radical neck dissection. For Stage II follicular carcinoma we do recommend neck dissection and for all Stage III lesions with no distant metastases, radical neck should be added.

Solid medullary carcinoma should be treated with ipsilateral lobectomy, contralateral subtotal lobectomy and radical neck dissection, since there is a high incidence of early metastases to the cervical nodes.[5]

Anaplastic lesions should be treated with resection of as much tumor and thyroid tissue as technically feasible, followed by external ionizing irradition and radioactive iodine.

We are unable to evaluate the effect of thyroid hormone suppression and radioactive iodine therapy on prognosis and survival due to inadequate information. Suppressive dosage of thyroid hormone is advocated for all thyroid carcinomas, continuous close follow-up on all Stage I and II disease, and later the addition of radical neck dissection if palpable nodes appear in the neck.

TABLE 8

EFFECT OF SURGICAL TREATMENT RELATED TO CLINICAL STAGING IN PAPILLARY AND FOLLICULAR CARCINOMA OF THYROID

	Stage I	Stage II	Stage III
Subtotal Thyroidectomy	13/1	4/2	5/4
Total Thyroidectomy	9/1	2/0	1/0
Lobectomy	11/1	2/0	1/1
Thyroidectomy and R. N. D.	3/1	14/2	7/3
Biopsy Only	1/0	...	...
Total	37/4	22/4	14/8
SURVIVAL	89%	82%	43%

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Single Left Superior Vena Cava

A Report of Two Cases with Associated Atrial Septal Defects Corrected Using Extracorporeal Perfusion

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WITH THE INCREASING USE of cardiac catheterization and angiocardiography in the evaluation of patients with congenital heart disease, a number of anomalies of the systemic venous and pulmonary venous system are being discovered.[1,8,14,16,20,23]

Although the incidence of a persistent left superior vena cava is rather high, the occurrence of the left superior vena cava without the accompanying right superior vena cava is relatively rare.[3,5,12,19,24] The association of a left superior vena cava with other cardiovascular anomalies is common, and for this reason the surgeon who undertakes correction of the cardiac abnormality must have a clear knowledge of the anomalies of the systemic venous return. He must be prepared to handle the technical problems presented by the anomalies of the systemic veins in establishing extracorporeal perfusion.

Hemodynamically the persistence of a left superior vena cava which drains into the right atrium via the coronary sinus is of no physiological consequence. We wish to report our experience with two patients in each of whom there was a persistent unilateral left superior vena cava associated with a large atrial septal defect. The technique of cardiopulmonary bypass and the surgical repair will be described.

Case I

This patient is an 11-year old girl of Italian parentage who was born after a full-term gestation and a normal delivery. No abnormality was noted at birth. At the age of two and a half years, she was admitted to the hospital for the first time with dyspnea and tachycardia. A diagnosis of bronchopneumonia was made at that time and she responded to the appropriate antibiotic therapy. During this admission, a grade III/VI systolic, rough ejection murmur was identified at the left third interspace. This murmur radiated into the pulmonic area. The pulmonic second sound was increased and the splitting of the pulmonic second sound was fixed. The x-ray disclosed that

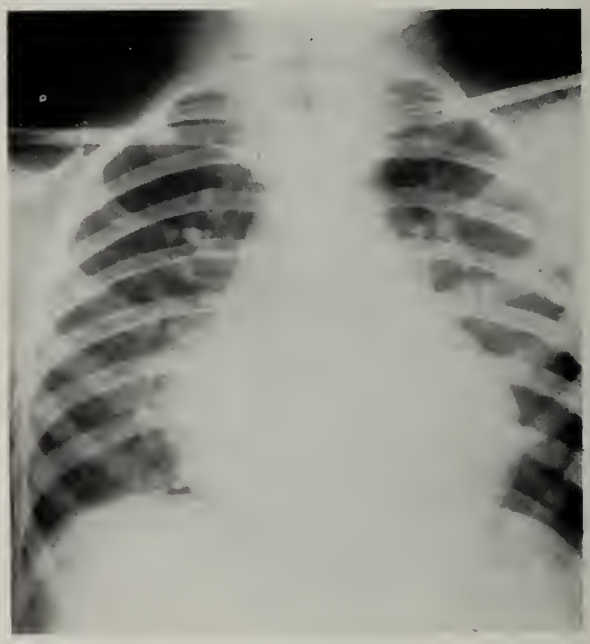


Fig. 1. Chest x-ray of Case I at 2½ years of age, demonstrating the cardiac enlargement and increased pulmonary vascularity.

the heart was globular in shape and large in the transverse diameter with a cardiothoracic ratio of 9.8:15.3. (Fig. 1). The electrocardiogram at this time disclosed tachy-

cardia and right ventricular overload. One month after discharge from the hospital, during which time complete recovery from the bronchopneumonia had occurred, she was readmitted to the hospital for cardiac catheterization. Cardiac catherization was performed from the left antecubital space. The catheter was directed repeatedly across the midline, but could not be introduced into the area of the right superior vena cava. The catheter rather easily passed downward along the left heart border and into the right atrium. The right ventricle and pulmonary artery could not be entered. At the conclusion of these studies the diagnosis was a persistent left superior vena cava draining into the coronary sinus and right atrium, and possible associated anomalous pulmonary venous return into the persistent left superior vena cava, and a large atrial left to right shunt was identified.

At five and a half years of age, the patient developed dyspnea, tachypnea, and

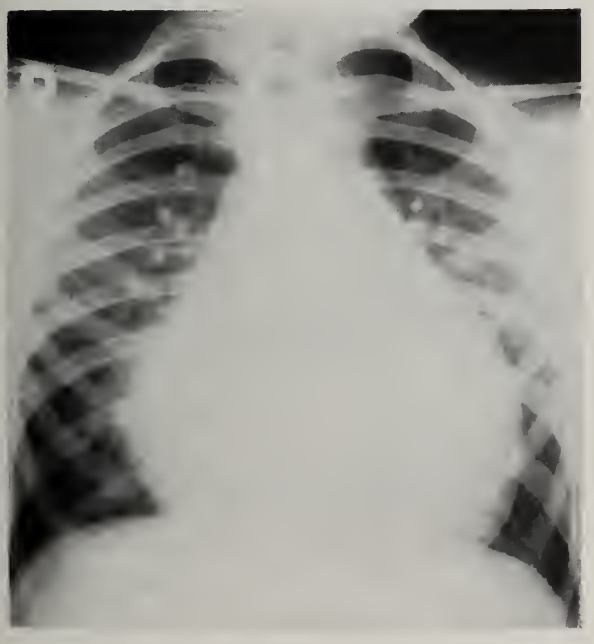


Fig. 2. Chest x-ray of Case I at 5½ years of age, at which time the patient was in obvious failure. Note the increase in cardiac size over the chest x-ray three year previously in Figure 1.

chest pain. Examination at this time disclosed that there was considerable increase in the heart size, and that she was in failure (Fig. 2). She was digitalized and her heart failure came under control. Because of this episode of failure she was admitted to the hospital for elective surgery.

Through an anterior left third interspace thoracotomy incision the surgeon identified a persistent left superior vena cava and felt that the left pulmonary veins entered the back of the right auricle. The surgeon removed the left pulmonary veins from the right auricle and anastomosed them to a left auricular appendage. Her postoperative course was uncomplicated, but her clinical situation showed no change following this surgery.

She was admitted to the hospital for the third time at the age of seven and a half years because of abdominal pain, pharyngitis and edema. Appropriate laboratory studies confirmed the diagnosis of acute glomerulonephritis from which she recovered with no residual measurable renal impairment. Because of the persistence of her murmur and cardiac enlargement, she was again admitted to the hospital at nine years of age for cardiac catheterization.

The venous catheterization and arterial catheterization were carried out from the right arm. It was impossible again to introduce the venous catheter into the area of the right superior vena cava. It passed across the mediastinum and down along the left heart border into the coronary sinus and right atrium. Summarization of the impression following catheterization and angiocardiography was that there were a large right ventricle, right atrium, and pulmonary artery. The left atrium appeared to be small as did the left ventricle. A left to right shunt was identified by oxygen saturations at the atrial level. The right atrium filled from the left atrium on recirculation during the angiocardiography study (Figs. 3a & b). The pulmonary veins from both lungs entered the left atrium. It was apparent from this catheterization and angiocardiography that all the pulmonary veins had not been removed from what the surgeon had



Fig. 3a. A reproduction of the angio-cardiographic study, shortly after the venous return phase of an injection which took place in the right ventricle. The crescent shaped shadow within the circle of the catheter is the sight of myocardial infiltration of the dye.

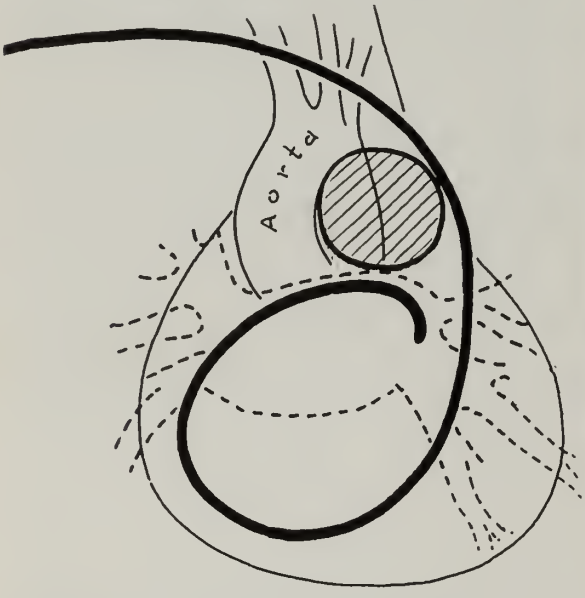


Fig. 3b. This is an ink sketch to clarify Figure 3a. The catheter curves along the course of the persistent left superior vena cava, enters the right ventricle. Following the injection into the right ventricle, the catheter flipped from the right ventricle and entered the position shown, where it passes through the interatrial communication to lie in the left atrium.

thought was the right atrium at the time of the original surgery. Presumably, only the left superior pulmonary veins had been removed from its insertion. This vein no longer functioned except through the intersegmental veins and then to the lower lobe veins.

Six months following the above studies, the patient was readmitted for open repair of her abnormality. Physical examination disclosed no cyanosis, clubbing or edema. She had a grade IV/VI harsh systolic murmur and thrill at the second and third left intercostal spaces. A grade II mid-diastolic rumbling murmur was present in the left lower sternal border. The pulmonic second sound was markedly increased and showed fixed splitting. The liver was palpable 2 cm. below the costal margin. (Chest x-ray as noted in Fig. 4).



Fig. 4. Photograph of a chest x-ray taken the day before operative correction. Compare with Figure 7.

Through a median sternotomy incision, complete cardiopulmonary bypass and hypothermia were utilized to repair the large atrial defect. The coronary artery distribution was normal, the ductus had been obliterated, and the right superior vena cava was completely absent. There was not even a residual area of fibrotic band to indicate the position of the right superior vena cava. The inferior vena cava was normal. There

was not a right azygos vein present. The left superior vena cava was present, measuring 2½ cm. in diameter. The pulmonary artery was two and a half times the size of the diameter of the aorta, and contained an easily palpable systolic thrill. Pressures measured before and after the repair are disclosed in Table I. The inferior vena cava was cannulated in the usual manner and the persistent left superior vena cava was cannulated via the coronary sinus. The coronary sinus opening measured 4 cm. in diameter. Upon opening the right atrium a large high ostium secundum defect was identified. The left atrium appeared to be small, as did the mitral annulus. Within the left atrium could be seen the scar of the previously ligated left superior pulmonary vein. Because of the small size of the left atrium, we felt it would be necessary not only to close the atrial defect but to enlarge the area

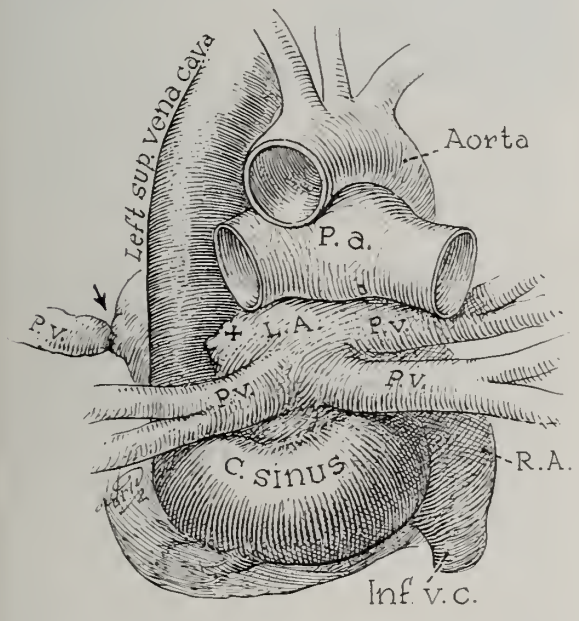
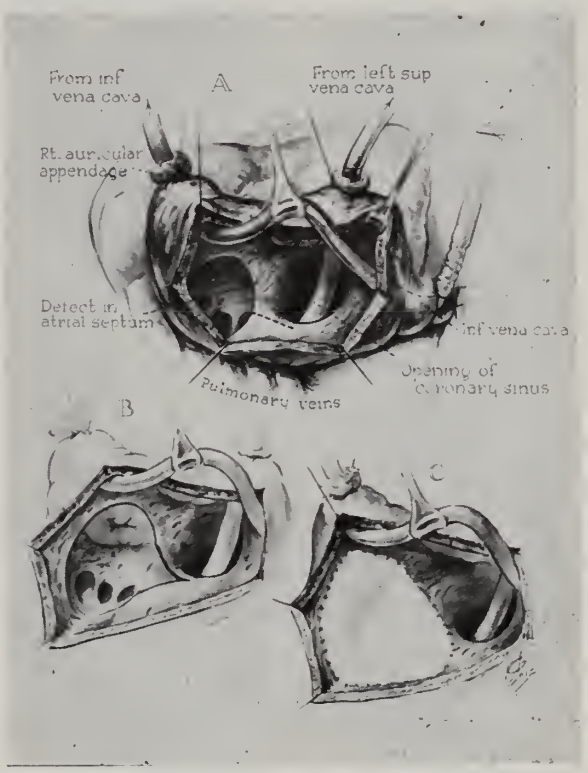


Fig. 5. This represents the anatomy as it appeared prior to surgical correction, as viewed posteriorly. The left superior pulmonary vein had been removed from the posterior aspect of the left atrium and anastomosed to the left artrial appendage. The large left superior vena cava entered the heart at the site of the coronary sinus.

of the left atrium. Consequently, a Teflon patch was utilized and sutured to the superior and anterior portion of the atrial septal defect. The defect was enlarged and the patch was further sutured to the lateral and cephalad borders of the right atrium in such a way that the superior portion of the right atrium, which normally would have been utilized as the entrance of the superior vena cava, was included into the volume of the left atrium (Figs. 5 & 6).



Figs. 6a, b & c. This represents the anatomy as defined at the time of surgery. The dashed line depicts the site of the incision made to enlarge the atrial defect as depicted in b. The closure was then achieved with a Teflon patch sewn around the periphery of the enlarged defect, and the superior portion of the right atrium. The inferior caval cannula was introduced through the atrial appendage while the cannulation of the persistent left superior vena cava carried out through the markedly enlarged coronary sinus.

The patient made an uneventful postoperative recovery. She has been followed for five years. She has no murmurs. Her electrocardiogram is interpreted as normal, and the chest x-ray is shown in Figure 7.

Case II

This patient was born after seven and a half months gestation and remained in an incubator until about six weeks of age because of prematurity. At one year of age, a heart murmur was first identified by the

family doctor. From that time on until the age of seven, the patient was followed at regular intervals in the Cardiac Clinic. Because of increasing ease of fatigability,



Fig. 7. The chest x-ray at the time of follow-up visit, 4½ years postoperatively, depicts the obvious change in cardiac size. Compare with Figure 4.

marked dyspnea on exertion, and failure to grow at the rate of her siblings, she was admitted to the hospital for cardiac catheterization and subsequent operation.

Physical examination at the time of admission disclosed a thin, small girl for her stated age. She had a grade V/VI blowing harsh systolic murmur over the second and third left anterior interspaces. The pulmonic second sound was exaggerated with fixed splitting. A slight thrill was palpable over the left sternal border. The liver and spleen were not enlarged and the peripheral vessels were all normal. The patient was not cyanotic and there was no clubbing or edema. The electrocardiogram disclosed a partial right bundle branch block with right ventricular overload. The chest x-ray is demonstrated in Figure 8.

The patient had cardiac catheterization. The results of this study yielded the diagnosis of an atrial septal defect, absent right superior vena cava with a persistent left



Fig. 8. Chest x-ray taken just before operative correction in patient No. II, disclosing the cardiac enlargement. Note the widening of the left superior mediastinal shadow which represents the site of the persistent single left superior vena cava.

superior vena cava entering the right atrium through the coronary sinus, possible partial anomalous pulmonary venous return.

The patient was operated upon utilizing extracorporeal perfusion. The technique of cannulation was identical to the previous patient. Upon opening the right atrium, a large high lying atrial septal defect was identified. The pulmonary veins clearly entered the left atrium. The left atrium appeared to be rotated toward the right thorax, and the ventricular muscle mass of the heart rotated more toward the left chest so that the mitral valve lay more posterior than normal. As a result of this the atrial septum lay in a more transverse direction than is normally seen. The atrial septal defect was closed with direct sutures in such a way that the upper portion of the right

atrium was included in the volume of the left atrium.

Pressures measured before and after the correction of this abnormality are disclosed in Table I.

a persistent left superior vena cava and found only five cases without a right superior vena cava or an incidence of 10.8 per cent.[5] In Campbell's report,[5] five of the 46 patients with a persistent left superior vena

TABLE I

Site	Case 1				Case 2			
	Catheterization		Surgical Pressures		Catheterization		Surgical Pressures	
	% O_2 Sat.	Pressure	Before Repair	After Repair	% O_2 Sat.	Pressure	Before Repair	After Repair
Left Superior Vena Cava	73				74	m 4		
Inferior Vena Cava	75				76			
Coronary Sinus	73				71			
Right Auricle	86	10	m 9	m 9	94.5	m 5	m 9	m 6
Right Ventricle	87	48/4	45/9	24/3	94	39/4	30/3	27/4
Pulmonary Artery	87	34/13	45/18	22/12	93	30/12	27/9	24/9
Aorta	98.5	115/83			100	112/78		
Left Auricle			m 9	m 10	100	m 9	m 9	m 9
Left Ventricle			105/12	100/3	100	110/4	80/3	109/6
Pulmonary Vein					100	wedge 13		

The patient's postoperative course was uncomplicated and when examined five years postoperatively, her growth and development have been normal. She has no murmurs, the pulmonic second sound is normal and splits normally with respirations (Fig. 9).



Fig. 9. Chest x-ray taken three years postoperatively, patient II. Note the normal cardiac size with the characteristic widening of the left superior mediastinum. Compare with Figure 8.

Discussion

Prior to the generalized use of cardiac catheterization and angiocardiography, the presence of a persistent left superior vena cava was discovered only at autopsy. The incidence as such is found to be one per 350 autopsies for congenital heart disease. Campbell found a left superior vena cava in three per cent of 1500 patients with congenital heart disease.[5] Fraser found an incidence of 4.3 per cent in patients with congenital heart disease.[7] In 1916, McCotter reviewed a series of 120 cases of persistent left superior vena cava and found obliteration or absence of the right superior vena cava in twelve cases, or 10 percent. In 1954, Campbell and Deuchar reported 46 cases of cava had drainage of the left superior vena cava into the left atrium. In these cases, essentially a single atrium resulted from a

very large atrial septal defect. We have identified a persistent left superior vena cava in 134 patients from a group of 1,875 who have been operated upon for congenital cardiac abnormalities. Of the 134 patients, 12 had absence of the right superior vena cava.

It is generally felt, that one out of 10 patients with a persistent left superior vena cava will have no right superior vena cava. However, in situs inversus with dextrocardia, but without visceral inversion, 40 per cent will have only a left sided superior vena cava.[10] The association of the atrial septal defect with a persistent left superior vena cava varies from about 25-40 per cent.[8,14,16,22,26] Drainage into the left atrium is very rare, and, if present, is usually in combination with an absent atrial septum or a single atrium.[6,15,18,25]

The embryology of the development of the superior caval system has been well described in many previous reports and will not be discussed here.

A left superior vena cava per se is of no clinical significance and may be considered a less common variant of the normal asymmetry of the human body. Hemodynamically, the persistence of the left superior vena cava is of no consequence and does not affect the prognosis of the patient if the vena cava drains into the right atrium via the coronary sinus. The most commonly associated defect is an atrial septal defect. The pulmonary veins may partially or completely empty into the left superior vena cava. In rare cases, the left superior vena cava ends blindly into a coronary sinus horn that fails to open into the right atrium.[11] Roentgenographic examination may reveal a widening of the left superior mediastinum with a left superior vena cava transposed laterally by the aortic arch. The diagnosis may be confirmed by cardiac catheterization and/or angiocardiography.[8,23] Difficulties are frequently encountered during cardiac catheterization in an attempt to direct the catheter into the right ventricle and pulmonary artery because of the acutely angled disposition of the coronary sinus in the right atrium. If a right superior vena cava is also present, then entry into the right heart is not difficult.

The persistence of a left superior vena cava is found with increasing frequency by thoracic surgeons.[12,13,16,22,24] The thoracic surgeon routinely seeks such a vessel when preparing for extracorporeal perfusion or inflow occlusion with hypothermia. The variations in the developmental anatomy of the systemic venous drainage are frequent. These must be known to the surgeon to allow for appropriate cannulation of the venous system. The persistence of the left superior vena cava is usually associated with a right superior vena cava, and the venous connection between both vessels is usually present.[4,5,7,13] This would allow for the occlusion of the left superior vena cava and cannulation of only the right vessels or visa versa. We attempt to determine the presence of cross communication by measuring pressures in the cephalad portion of the left superior vena cava. Occlusion of this vessel intrapericardially is usually accompanied by a rise in pressure of 10 to 15 mm. of Mercury, and then the pressure will plateau at this level. Elevation above 15 mm. of Mercury or a gradual continual rise, indicate to us the need for cannulation of the left superior vena cava during bypass. Pressures below this, particularly if associated with a left superior vena cava smaller than the right, are interpreted by us to mean that cannulation of the left superior vena cava is not necessary. During perfusion, occlusion of the persistent left superior vena cava is necessary to prevent either flooding of the right heart during bypass or possible aspiration of air into this vessel if the central venous pressure falls below atmospheric.

The inferior caval anomalies are also important in the cannulation.[2,4,16,24] The persistence of a large azygos system with the absence of an inferior vena cava is easily handled by using a large superior caval can-

nula. The entrance of the hemi-azygos system in either a persistent left superior vena cava or a normal inferior vena cava above the diaphragm is handled by cannulating a left superior vena cava via the coronary sinus or the usual inferior caval cannulation. The extremely rare incidence of the inferior caval entrance into the left atrium requires special attention to cannulate, but is also possible.

In the cases presented, the small size of the left atrium in Case I was enlarged by virtue of including the superior one-third of the right atrium into the left atrium. Whether this is necessary is questioned since to determine this, one would have to close the atrial septal defect in the usual fashion, terminate perfusion, and measure pressures. A marked elevation of the left atrial or pulmonary venous pressure would necessitate reestablishment of bypass and enlargement of the left atrium. The choice to enlarge the left atrium primarily was not difficult to make.

We wish to emphasize the need for routine search of systemic venous anomalies at the time of surgery to prevent the abnormality becoming only too obvious after cardiotomy.

Summary

With the increased use of cardiac catheterization and angiocardiography in the evalation of patients with congenital heart disease, increasing numbers of anomalies of the systemic venous system are being discovered. Although the incidence of a persistent left superior vena cava is rather high, the occurrence of the left superior vena cava without accompanying right superior vena cava is relatively rare. Two patients with an associated atrial septal defect are presented and the surgical technique utilized in repairing this type of abnormality has been described. The need for the thoracic surgeon to be thoroughly familiar with the embryological development of the systemic venous return to the heart is emphasized. The surgeon must be prepared for the appropriate cannulations in order to avoid the distressful and often fatal outcome of discovering an anomaly of systemic venous drainage after perfusion is established and cardiotomy has been performed.

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Reye's Syndrome

Encephalopathy Associated with Fatty Changes in the Viscera in Siblings

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REYE'S SYNDROME[1] is an acute encephalopathy in infants and children which progresses rapidly to death within 24 to 48 hours in most cases. A few recoveries have been reported. At autopsy the brain is found to be markedly edematous, and there are marked fatty changes in the viscera, especially the liver.

This condition is now recognized with increasing frequency.[2] Etiology is unknown, and specific virus isolation has been rarely reported. It now appears that the syndrome is causally related to a number of different viral and toxic agents.[3,4,5] Several different viruses have been found, each associated with a single case: coxsachievirus A[6] and A9[7] and B1[7], influenza virus B[8], reovirus[6], and Echo 11.[9] A report[10] of four cases of fatal varicella with intractable hypoglycemia ascribed to salicylates, has now been reassessed by its authors Mortimer and Lepou.[11] They now agree that their cases represent Reye's syndrome associated with chickenpox, although they still consider salicylates important in causing the metabolic disturbances.

Becroft[12] reported siblings who developed fatal Reye's syndrome nine months apart. No other case reports in siblings have been noted, but Randolph's[13] cases included one sibling who died of Reye's syndrome and another who developed a mild form with elevated transaminase levels. The same author[14] later reported a case of serious but non-fatal illness in one child whose three siblings all had mild respiratory and gastrointestinal illness associated with elevated transaminase levels.

We are reporting two siblings who developed this condition five years apart. The first child had had chickenpox for five days. At the time of the second child's illness, a third sibling was ill with a condition which clinical and laboratory findings indicated was a mild case of infectious hepatitis. Both cases of Reye's syndrome died rapidly, while the third sibling apparently recovered completely. It is of interest that this third sibling had congenital dislocation of the lens of each eye, while a fourth sister has congenital absence of the pectoralis major and hypoplasia of the left forearm and hand. Neither of the two siblings who died had any evident congenital anomalies.

Case 1: F.B., a seventeen-month old white female, was admitted to DePaul Hospital by one of us (J.O.R.) on the evening of May 5, 1961, with convulsions and chickenpox. The present illness began approximately five days prior to admission with chickenpox (caught from sibling). The night prior to her admission she became acutely ill; the temperature was "high", she was restless and vomited; the mother said she acted as though she had a headache. During the day she was no better. Her family doctor examined her and prescribed erythromycin and Coricidin; by evening her temperature was 105 degrees and she had a generalized seizure.

P. E. Patient was a well developed and nourished white female infant having a protracted generalized convulsion; there was

a general varicella rash—fifth day. Some of the lesions were hemorrhagic.

Lab: Hemoglobin 11.3, 75%; Hematocrit 36%; Wbc 18,000; Bands 4; Pmn 40; Eosinophile 1; Monocytes 1; Lymphocytes 54.

Blood—no growth; Spinal fluid—no growth; throat culture—alpha strep, N. Catarrhalis; Spinal fluid: WBC 2; RBC 3; Protein: 9 mg.

Hospital course: Phenobarbital and intermittent Vinethane inhalation were used to control seizures; intravenous Decadron was given in an attempt to reduce cerebral edema. During the night there was steady deterioration of her general condition. She remained unconscious, there was occasional bloody vomitus and periods of apnea. She died approximately twelve hours after admission.

Autopsy findings included cerebral edema with congestion of meninges and diffuse perivascular and neuronal edema; these were deemed the ultimate cause of death. The pathologist commented, "The paucity of intranuclear and cytoplasmic inclusions in all organs after repeated careful searches by the department would lead one to believe that there was not a disseminated chickenpox virus that could be detected by our methods." Fatty metamorphosis of the liver was described, as were "cloudy swelling" of the heart and kidneys and "septic swelling" of the spleen.

At the time, it was not known that the fatty metamorphosis of the liver was significant in association with the cerebral edema, and that hepatic failure might have been a major factor in causing the edema. Reye's first report of this association did not appear until two and a half years after the death of this patient. In retrospect, this case would seem to meet the diagnostic criteria for Reye's syndrome. Unfortunately, no blood or spinal fluid glucose levels were available.

Case 2: S.B., a three year, four month old white female, was seen for the first time by one of us (FPW) on 8/26/67 with the history of being well except for a slight loss of appetite and perhaps low grade fever for a few days. Within a few hours she had become restless and disoriented, vomited several times, then lapsed into a comatose state accompanied by episodes of generalized rigidity and wild thrashing about. The presence of numerous medications in the home, including some with prochlorperazine (Compazine) and other phenothiazine derivatives, was acknowledged by the parents. However, no medication was known to have been taken by the patient except for a few doses of aspirin administered during the night.

Physical examination on admission to King's Daughters Children's Hospital revealed no evidence of ENT inflammation, respiratory infection, cardiac abnormality, or organomegaly. The child did not respond except by an increase in her thrashing about and her episodes of extensor rigidity when disturbed. There was no true stiffness of the neck, back, or hamstrings. Pupils were dilated and responded poorly to light. Transient Babinski reflexes were noted.

Laboratory findings were not revealing. They included Hgb 12.6 gm. wbc 6,300 with 70 PMN, 26 lymph, 4 mono, glucose 73 mg., BUN 18 mg., Na 146, K 4.9, Cl. 108, CO_2 14 meq. salicylate level 6.6 mg. Urine: 3+ protein, many RBC, 3-5 wbc, culture—no growth. Spinal fluid: 0 cells, 19 mg. protein, 75 mg. sugar, culture—no growth. Blood culture showed no growth, nasopharyngeal culture normal flora.

Supportive therapy was given with intravenous glucose and electrolytes and ampicillin. On the assumption that phenothiazine toxicity might be involved, Benadryl was also given. There was transient relief of the rigidity, but overall deterioration occurred progressing to profound coma and death approximately twelve hours after admission.

Autopsy showed marked cerebral edema without microscopic evidence of inflamma-

tion. Lungs showed vascular congestion with areas of intra-alveolar hemorrhage and focal bronchopneumonia. The liver and, to a lesser extent the kidney, showed "hepatocellular fatty change." The diagnosis of Reye's Syndrome was made by Ralph Stevens, pathologist at Norfolk General Hospital.

I.B., the eight year old sister of the patient, had developed poor appetite, malaise and mild abdominal discomfort and intermittent vomiting, beginning a few days before S.B.'s illness. She was examined on the day of her sister's death with negative findings. Four days later she was slightly icteric. Urine was positive for bile and thymol turbidity 16.1 units. On a twelve-channel Serum Chemistry Graph the total serum bilirubin was 3.8 mg., the alkaline phosphatase 32 K.A.U., and both L.D.H. and S.G.O.T. were above the top value on the graph which was 380 W.U. for L.D.H. and 280 K.U. for S.G.O.T. One week later she was clinically much improved, and was thereafter lost to follow-up.

Comment

Reye's syndrome appears to be the result of a specific reaction triggered by unknown factors in a child suffering from any one of a number of usually mild viral infections.[6-9] Specific poisons or toxins may have contributed to a few cases.[3,4,5] One previous report plus the present report of siblings dying of Reye's syndrome raises the possibility of a genetic predisposition. In this regard the presence of multiple somatic congenital anomalies in our cases may or may not be significant. Schaffner[15] commented on the similarity of Reye's syndrome to certain experimental conditions in animals, and postulated that it might be related to "deficiency of a single enzyme on a congenital basis, producing a rapid clinical course after years of depletion of some key intermediate until a critical level is reached."

Enthusiasm for a genetic factor must be tempered by the realization that Reye's syndrome is not rare, and single cases often go unreported. It is quite possible that the occurrence of the syndrome in siblings results in reporting of cases that might otherwise have been undiagnosed or unreported. This would make the incidence in siblings appear falsely high in comparison to the total number of cases reported; hence, the true significance of these case reports in siblings must remain in doubt.

Many reported cases have had profound depression of the spinal fluid and/or blood glucose, but this is no longer considered an essential part of the syndrome. Serum transaminase levels have been markedly elevated in all cases where it has been tested, and serum ammonia was elevated in the two cases where it was recorded.[7,14]

The sequence of events seems to be as follows:

1. Non-specific insult to the liver which is perhaps genetically predisposed to injury; depletion of glycogen and hypoglycemia may play a part in this injury in many cases.
2. Accumulation of toxic substances, including ammonia, which the liver cannot detoxify and which set up a vicious cycle of further damage to the liver.
3. Toxic and perhaps hypoglycemic damage to the brain cells leading to
4. acute cerebral edema and death. This schema is modified from that proposed by Utian et al.[6], who assumed that hypoglycemia was the essential causative factor.

Treatment in the past has been largely supportive. Prompt recognition of the syndrome by clinical symptoms plus elevated transaminase levels may allow more accurate therapy aimed at reducing brain edema, supporting blood glucose levels, and reducing the toxic effect of liver failure. Randolph and Gelfman's[14] child who recovered was treated with large doses of dexamethasone plus "hypertonic solutions of multiple electrolytes with dextrose, but at a rate that kept the patient in mild dehydration." The same authors mention the pos-

sible benefit of exchange tranfusion to lower levels of blood ammonia, and other authors[2] suggest sterilization of the intestinal tract with antibiotics or conversion of the intestinal flora to Lactobacillus acidophilus. If such measures failed to reduce blood ammonia levels, we would suggest the possibility of temporary primate cross-circulation.

Summary

Reye's syndrome is reported in white female siblings, each of whom developed rapidly progressing cerebral deterioration with death within 24 hours, with autopsy findings of acute cerebral edema and fatty degeneration of liver and other viscera. One child became ill in 1961 following chickenpox and the other in 1967 at a time when a third sister was ill with an apparent infectious hepatitis. Since this is the second instance in which siblings have been reported with Reye's syndrome, a genetic predisposition is tenuously postulated.

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Dactylolysis Spontanea (Ainhum)

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DACTYLOLYSIS SPONTANEA is a relatively rare disease of unknown etiology first reported by Clark in 1860 along the African Gold Coast. In 1867 da Silva Lima together with Wuchereria introduced the term ainhum. The term ainhum is derived from the Yoruba language which means to "saw" or "file". Matas, however, believed that the term was derived from a Brazilian Negro Patois which means fissure.

There have been numerous reports from Brazil, Panama, East and West Africa, the West Indies and India. An instance of ainhum or dactylolysis spontanea occurs one in every 2,500 patients hospitalized in India. The first case of ainhum reported in the United States was in 1881, and was a case of a ten year old Negro girl living in North Carolina. Geographically most of the cases reported in the United States have been in the southern region or the southeastern region, or from people who have migrated from southern climate.

Case Report

A. J. Case No. 229161598, a 46 year old Negro male, was first admitted to the VA Hospital, Hampton, in 1961 with possible gangrene of the right great toe. Twenty-four hours after admission the toe was found in the patient's bed following spontaneous amputation (Fig. 1).

He was born in Newport News and lived all his life on the Virginia Peninsula except for World War II service in North Africa one year and Italy fifteen months. He had syphilis in World War II with adequate treatment and without evidence of recurrence. The second admission was in January 1964, with admitting diagnosis of fungus disease of the feet. It was noted on the initial examination that the left fifth digit was amputated, and by inquiry it was established that the toe had spontaneously detached itself. At the same time the examination revealed that the left great toe had an ulcer on the plantar aspect in the fold and spontaneous amputation was in progress. The third admission in July 1967 revealed that the right fifth digit was amputated spontaneously during the interval between the last admission and the present one. This toe was amputated only a few days prior to



Fig. 1. This figure demonstrates the right great toe immediately following spontaneous severance. The left great toe shows inflammatory changes consistent with fibroblastic activity at the base of the foot. Note the minimal infective changes present.

Film courtesy of Medical Illustration Service, VA Center, Hampton, Va.

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admission in July. At this point the patient had developed secondary infections in the feet from lack of care, and he was treated on this admission for infections predominately. The patient was readmitted for



Fig. 2. This figure shows the right foot after spontaneous amputation of 1st, 4th and 5th digits, and after the patients' disease had progressed for 7 years. Note secondary infection as caused by disease eroding into the tissues of the dorsal and ventral surfaces of the foot.

Film courtesy of Medical Illustration Service, VA Center, Hampton, Va.

the fourth time in May 1968 for infection of the feet. Neurological and dermatological consultations were obtained from our consultant staff, as well as from the consulting staff of the Medical College of Virginia dermatological service. Antibiotics controlled by cultures and sensitivity studies healed the feet, and the patient was discharged again only to be readmitted in 1969. Extensive secondary infection was present with tendonitis extending along fascial planes of the feet (Figs. 2 and 3) This required left below knee amputation, followed by transmetatarsal amputation of the opposite foot. Nasal swabs, biopsies of the feet, spinal taps, skin biopsies, hematological and biochemical studies were performed to rule out leprosy, scleroderma, Raynaud's disease and primary mycotic infection. Roentgenographic studies showed findings consistent. with dactylolysis spontanea (Fig. 4) At the present time this patient is ambulatory with a below knee prosthesis, and walks well on



Fig. 3. (Same as caption 2)

Film courtesy of Medical Illustration Service, VA Center, Hampton, Va.



Fig. 4. X-rays of patient in early portion of his disease showing fibrosis around notching of left great toe and ulcer on the plantar aspect which are characteristic roentgenographic findings of this disease.

Film courtesy of Medical Illustration Service, VA Center, Hampton, Va.

the stump of the opposite side; i.e., transmetatarsal. There is no evidence of further disease in the upper extremity nor of vascular disease. The remaining diagnoses have been eliminated (See Fig. 5).



Fig. 5. Picture of the lower extremities at present.

Film courtesy of Medical Illustration Service, VAC, Hampton, Virginia.

Pathologic examination of the below knee amputation specimen showed changes consistent with dactylolysis spontanea with marked fibroblastic proliferation of the corium and dermis at the stump of the toes.

Etiology

The specific cause is not known. Historically, there are theories that it was a form of leprosy. This was disproved in 1872 by Wucherer and other early investigators. In 1867 de Silva Lima presented the concept of circumscribed scleroderma. Shepher and Scheube believed ainhum is due to a trophoneurosis. In 1896 Matas wrote that the disease was actually an annular scleroderma due to a trophoneurosis. Weinstein and Pusey, Abbe and Welch shared similar views with Matas. A traumatic theory was suggested by Eyles, Manson-Behr and Maass. Wellman believed that the disease was essentially infectious and that the chigger (Sarcopsylla penetrans) was the responsible agent. Horwitz reported a case in 1887, believing bacterial infection was the cause. Castellani maintained that the parasitic infection was basically responsible. In 1924 Wright reported a case in which a patient with syphilis had a similar kind of picture clinically and speculated upon its relationship to luetic disease. Acton in 1928 believed the disease to be a band of scleroderma due to hypothyroidism and parathyroid dysfunction.

Clinical Manifestations of the Disease

A circular furrow, the so-called "constricting band", gradually but progressively encircles the digit from the digitoplantar fold. With progression of the constricting furrow the distal part of the toe becomes bulbous and enlarged, remaining attached to the foot by only a narrow pedicle in late cases. The final stage is spontaneous amputation. The fifth toe is the most commonly affected. Occasionally other toes of the foot are involved. Castellani states that ten percent of patients show involvement of the fourth toe. Cases of bilateral involvement are reported. Males are affected more often than females in a ratio of 2:1, with a peak incidence in the third and forth decades. The colored race, especially Negro, is predominately affected: only rarely has a case been reported in the white race. The duration of the disease is not constant; that is, from the first appearance of the furrow until spontaneous amputation occurs or surgical amputation is performed. The shortest duration reported was probably Gessner's case in which spontaneous amputation took place after one month. Weinstein states that the duration may be as long as twenty years; however, in more than fifty percent of the cases the duration is less than five years. Pain is described by a large majority of the patients, but is usually late in

the disease and secondary to infection. Ainhum has been associated with descriptions by Mata which suggest a familial etiology, but this has not been confirmed. Differential diagnosis requires studies to rule out leprosy, scleroderma, Raynaud's disease, congenital constrictions of the digits and neurotrophic ulcers.

Pathology

Basically the diagnosis is made upon the clinical findings, particularly for those cases which are seen late. Early cases have noted hyperkeratosis of the epidermis along the region of the furrow with papillae somewhat elongated. Chronic inflammatory reaction is seen in the corium with connective tissue proliferation, round cell infiltration and edema are also present. Sweat glands are atrophied. No lymphatic changes are seen but the blood vessels may show varied pathologic changes ranging from no change at all to complete occlusion of the end arteries with intimal destruction. This vascular pathology is always secondary. The spontaneously amputated digits show dry gangrene of all tissues.

Roentgenologic Findings

Osseous changes are variable. In early cases narrowing of the trabeculae with bone absorption in the digit adjacent to the furrow is seen. As the disease progresses the bone resorption becomes complete proximal and subadjacent to the furrow. The distal phalanx may be preserved but often is involved in the rarefying osteitis.

Prognosis

When the disease is recognized, even before pain is a prominent symptom, amputation of the digit should be performed. This is true in a large majority of cases, particularly when secondary ulceration occurs. Early amputation will therefore avoid the painful stage. Cases found late following spontaneous amputation with secondary infection involving the amputated sites may necessitate a great deal more surgery.

Summary

A case of ainhum is presented. The obscure disease entity is discussed. The literature has been searched and partially reviewed. Diagnosis in our case was delayed resulting in secondary infection of the feet following the spontaneous amputation of the first and fifth digits bilaterally. The picture was clouded by bacterial and mycotic infections requiring amputation below the knee of the left leg with a transmetatarsal amputation on the right to control the attending infectious processes. We believe this is the first case of dactylolysis spontanea reported in Virginia since 1897, when G. K. Simms reported a case of ainhum in the bulletin of the University College of Medicine in Richmond, Virginia.

(References may be obtained from the authors in reprint.)

Veterans Administration Hospital
Hampton, Virginia

Clinicopathological Conference . . . .

Hepatic Coma and Ureteral Obstruction

DISCUSSANT:
R. C. Chapman, M.D.
PATHOLOGIST:
E. Stanley Avery, Jr., M.D.
Norfolk General Hospital

This was a 57 year old white man who was admitted to the hospital for the fourth time one month prior to death with the chief complaint of abdominal pain and blood in the urine. The first admission was five years prior to death, because of an acute myocardial infarction. He did well, but required a second hospitalization for severe angina. Two years prior to death, the patient was admitted to the hospital for the third time with left flank pain and passage of blood clots in the urine. The source of urinary bleeding was felt to be due to prostatitis; the left flank pain was felt to be muculoskeletal in origin. Cystoscopic examination and x-ray of the genitourinary and gastrointestinal tracts were within normal limits. Six months prior to death, the patient was extensively worked up in an outside hospital for his flank pain and hematuria. At that time there was no satisfactory explanation for these complaints. He did have mild diabetes mellitus and was placed on Orinase.

On the fifth and final hospitalization the patient again was admitted with blood in the urine and abdominal pains. The pain was chiefly in the back and radiated down into the inguinal area and at times was severe in the lower anterior abdomen.

On physical examination the patient had a blood pressure of 130/80 mm of Hg., pulse rate of 68/min., and temp. of 98°(F). The patient was poorly developed and appeared chronically ill. The skin was pale and slightly icteric. The head, ears, eyes, nose and throat were unremarkable. There was no lymphadenopathy and no thyroid enlargement. The chest examination revealed normal breath sounds without rales. The heart border was within normal limits to percussion, and the heart sounds were of good quality with a soft systolic murmur. There were no rubs or irregularity. There were no abdominal bruits in the neck, epigastrium or over the femoral vessel. The abdomen was diffusely tender and the spleen was palpable. The liver and kidneys were not palpable. No masses were palpable on rectal examination, and the prostate gland was normal. There was no calf tenderness or peripheral edema. There was much muscle wasting. The neurological examination was within normal limits.

Laboratory studies revealed a hematocrit of 43%, hemoglobin of 13.7 grams, white blood count of 9,000 with a normal differential. Urinalysis revealed a pH of 6.5 with 4+ protein, 4+ glucose, 4+ acetone, and 4+ occult blood. The Sp. Gr. was 1.034, and the urine sediment was loaded with erythrocytes and 6-8 leucocytes/hps. The fasting blood sugar was 290 mg% and the BUN was 12 mg%. Two LE preps were negative. The total serum bilirubin was 4 mg% with a direct of 1.7 mg%. The SGOT was 144 units and the SGPT was 330 units (Reitman-Frankel). The serum calcium was 9.6 mg% and phosphorous 4.4 mg%. A KUB x-ray suggested a calculus at the right uretero-vesical junction. A right retrograde pyelogram was negative. An IVP revealed obstruction of the distal right ureter with marked uretero-pyelocaliectasis. The brain scan was normal. A biopsy of the urinary bladder mucosa was interpreted as "cystitis". Exfoliative cytology of the urine revealed a Class V cytology (highly atypical cells present, probably malignant).

The patient's condition gradually worsened with a deepening of his jaundice. He

required increasing doses of narcotics for abdominal pain (Demerol) and he continued to have hematuria. On the ninth hospital day, he was put on Prednisone (10 mgm. BID) with lessening of his abdominal pain. His total bilirubin fell to 1.8 mg% with an indirect of 0.7 mg%. On the twentieth hospital day, the patient was scheduled for exploratory laporotomy for the possibility of carcinoma of the bladder. However, the morning of the scheduled surgery he had massive gastric hemorrhage and vomiting of bright red blood, shock and required multiple blood transfusions. A Blakemore-Sengstaken tube was inserted into the stomach. The following day the patient was unconscious and had a serum ammonia of 852 mcg%. He was treated with Neomycin and cathartics and the following day the ammonia level was down to 274 mcg% and the patient was semicomatose. He had no more massive bleeding but his hematocrit continued to fall, and he continued to require frequent blood transfusions. His condition improved. Five days prior to death, on the 32nd hospital day he rapidly developed ascites. On the day of his demise he complained of severe chest pain while standing and after getting back into bed expired shortly thereafter.

Discussion

Dr. Chapman: This is a case of a 57 year old patient who was first admitted to this hospital five years prior to death with a myocardial infarction and apparently recovered from this pretty well. Then he was admitted to the hospital five weeks later because of angina decubitus, remained in the hospital for a short time and was discharged. That is the last we hear about him for about three years, so I think we can assume that these were the proper diagnoses and that he did do reasonably well for a prolonged period of time. He was then readmitted for the third time two years prior to death because of left flank pain and passing blood clots, presumably from the urinary tract. There was no description of the pain nor information regarding whether it was constant, dull, aching or colicky. Apparently there was some associated pain in the left upper quadrant of the abdomen as well, and it was concluded that this pain was of musculoskeletal nature; so perhaps it was aggravated by movements of the back although this was not stated. There was no comment about whether there was any position of relief (if the patient tended to lie in bed with legs curled up or anything of that sort). X-ray evaluation of the GU tract was apparently normal and the hematuria was attributed to prostatitis. I don't think one can draw too many conclusions from that fact, because very often if a urological work-up for hematuria is negative it will be attributed to bleeding from prostatitis and statistically this is most likely to be the source of bleeding. So this may have been the case or there may have been some findings that led them to believe that the bleeding did in fact come from the prostate and this episode of hematuria may have been unrelated to the subsequent ones. I think it is much more likely, however, that it was a harbinger of what happened to him later. The blood sugars at that time were in the diabetic range for a patient of his age.

His final admission to the hospital is the one with which the protocol is mainly concerned, but between the last two admissions he was apparently admitted to another hospital and it was stated in the protocol that while there he was placed on Orinase. No other information was given. The final admission here was again prompted by bloody urine and pain "in the back and abdomen". His back pain was not further localized except to say that it was as it had been during the previous year and so presumably was mainly in the left flank. There was also pain in the lower anterior abdomen as well. Physical examination revealed that the patient was poorly developed and nourished and appeared to be chronically ill. He

weighed 127 pounds and if he was of reasonably normal height, this would suggest that he had lost a great deal of weight. He was said to be clinically slightly icteric, and otherwise his physical findings were limited to the abdomen. The abdomen was diffusely tender. The spleen was said to be palpable, but one cannot tell the size. It is mentioned that the liver and kidneys were not palpable. There was a great deal of muscle wasting, and it must be assumed that this was not out of proportion to the general weight loss. No specific loss of muscle power to suggest a specific myositis was noted. His laboratory studies showed no evidence of anemia, although this could have been misleading because of chronic debilitation. It may well be that if he had been properly hydrated he may have been somewhat anemic, although we can't speculate further than that. There was a high normal white cell count. The urine showed a 4+ albumin but also a 4+ occult blood so that the albumin can't be attributed to a specific glomerular lesion of any kind and probably reflects a bloody urine. There was sugar and acetone in the urine and a blood sugar of 290. So there was evidence of diabetic ketosis perhaps with some starvation ketosis as well. His blood urea was normal, and there were two negative LE preps. His clinical icterus was confirmed by a total bilirubin of 4 mg.% As usual the fractionation of the bilirubin didn't help too much with about equal direct and indirect fractions being reported. The SGOT and SPGT were significantly elevated to a level compatible with a multitude of different liver ailments, but were not high enough to be particularly suggestive of primary hepatocellular disease. It is often said that an SGOT greater than 400 units almost invariably reflects hepatocellular disease in the absence of myocardial infarction or some other obvious cause; but below this level you can't be sure. The SGPT tends to be higher than the SGOT in patients who have infectious hepatitis. The serum calcium and phosphorous were normal. There was a suggestion of calculus of the right uretero-vesical junction on the KUB, but apparently this was not a valid finding because the radiologist has stated that he thought he could see the little calcification which they had reference to outside the ureter on the retrograde. The retrograde pyelogram was said to be normal, but from the discussion that was given here by the radiologist there may have been some extravasation of dye outside the ureter. Nevertheless, I take this normal report to mean that the mucosa appeared normal throughout the course of the ureter. This would indicate that there was no intrinsic ureteral lesion. On the intravenous pyelogram there is certainly a marked degree of dilatation of the ureter and pelvis of that kidney and yet there was no filling defect in the pelvis to suggest a primary tumor of the pelvis. The biopsy of the bladder was negative except for evidence of cystitis and the exfoliative cytology revealed a Class V pap smear. The fact that there was no apparent intrinsic lesion of the ureter found and that there was marked dilatation of the right collecting system suggests to me that this was most likely a metastatic lesion of the distal right ureter or uretero-vesical junction shedding cells into the urine and producing ulceration, hematuria and extrinsic ureteral obstruction. The possibility of a primary malignant tumor of the ureter does serve some comment, however. Over 500 cases of primary ureteral carcinoma have been documented in the literature. They are quite rare, however. They tend to occur with a 2:1 incidence in males, and a little more frequently on the right. They tend to occur in the lower third of the ureter so all of this would fit the location of this particular lesion. They tend to mestastasize more readily than do tumors of comparable malignancy of the bladder and this is thought to be due to the fact that the mucosa of the ureter is a much thinner structure with a much richer vascular-lymphatic drainage, allowing metastatic lesions to

occur more readily. They metastasize characteristically to the lymph nodes and liver. Careful retrograde studies should reveal an intrinsic ureteral defect in all cases, according to the urological sources I consulted. This had been my strongest reason for feeling that this was not a primary ureteral carcinoma. I will assume that there was no intrinsic ureteral lesion. Usually the tumors are either a transitional cell carcinoma or a squamous cell carcinoma. Metastatic tumors to the ureter usually produce obstruction due to direct invasion of the ureteral wall rather than compression. Apparently the ureter is situated in fairly loose connective tissue and can avoid becoming compressed. So when metastatic tumor involves it, it is usually by direct invasion of the ureteral wall. Mucosal ulceration and hematuria often occur at sites of metastatic tumor in the ureter. The primary tumors which metastasize to the ureters in the order of frequency are: prostate, stomach, lymphoma, cervix, urinary bladder, breast, lungs, and ovaries.

The patient's hospital course was one of temporary improvement followed by a sudden, massive gastrointestinal hemorrhage followed by a temporary coma. He recovered from the coma then suddenly collapsed and died. His jaundice deepened and his abdominal pain became increasingly more severe and required Demoral for its relief. He continued to bleed from the urinary tract, and then we are told that he was placed on Prednisone in a cautious dose of 10 mg BID. This is very interesting; I wonder why they did that. There is no information given as to platelet counts or coagulation studies. I wonder if he might have been thrombocytopenic. He had a large spleen but the platelet count isn't mentioned. Was the Prednisone given for treatment of suspected lymphoma, for instance, or suspected insipient hepatic coma? Following initiation of this steroid, it is stated that his bilirubin fell but it often does in a nonspecific way in patients who are receiving steroids and does not necessarily signify improvement. However, it was also said that he had less abdominal pain and his enzymes seemed to fall as though he might have been improving from the modest doses of steroids that he received. He was scheduled for surgery for possible carcinoma of the bladder, but on the day he was scheduled to go to the operating room he had massive GI hemorrhage with hematemesis, bright red blood, shock and a Blakemore-Sengstaken was inserted. They must have assumed that he was bleeding from esophageal varices. Nothing is said in the protocol to make one think that this man might have had hepatic disease prior to this admission to the hospital, and when you think of the varices bleeding you usually think of liver disease of some duration. But the next day he was comatose and had a tremendously high blood ammonia level (852 mcg%). The usual measures of treating hepatic coma resulted in improvement. His ammonia level fell to 274 mcg% the next day when he awakened. So this is all very unsettling and it makes me wonder a little about whether he may have been an alcoholic. Was he an alcoholic, Dr. Avery? Is there anything in his chart to suggest hepatitis in the past or any evidence of pre-existing liver disease.

Dr. Avery: There is no mention of alcoholism, hepatitis or pre-existing liver disease in the patient's chart.

Dr. Chapman: If he had been an alcoholic or he had had a history of hepatitis in the past, he would have been expected to develop hepatic coma on the basis of its commonest cause which is Laennec's cirrhosis. The coma then would be on a basis of varices, blood in the gut, urea splitting organisms, and ammonia intoxication, etc. In Adam's and Foley's series of 60 cases of hepatic coma, 50 of them were cirrhotic, all of whom were chronic alcoholics except seven; three episodes of hepatic coma occurred in hemachromatosis; and one

had a toxic hepatitis; three had fulminating infectious hepatitis and three had acute yellow atrophy. Hepatic coma is known to occur rarely as a result of extensive tumor involvement of the liver and esophageal varices occasionally reported as well. So presumably this could have occurred here, but is it a little troublesome that there is no mention made of a large nodular liver. We don't have a liver biopsy and we don't have a liver scan or anything to suggest that there was anything terribly unique or unusual about the liver at all, except the fact that he did have moderately elevated enzymes and he did have jaundice on admission to the hospital. But although metastatic tumor producing these developments is rare, I think it has to be considered because of the evidence that the ureter was involved by malignant disease. If Dr. Avery had described the man as being bronze with a high serum iron and a saturated iron binding capacity, hemachromatosis would be a neat explanation for everything that happened to him; the diabetes, cirrhosis, and splenomegaly are all very characteristic. The cardiomegaly, which was attributed to his arteriosclerotic heart disease, could also be attributed to hemachromatosis. He might have developed a hepatoma superimposed on his cirrhotic liver as a part of the picture of hemachromatosis since a high percentage of these patients develop hepatoma. He might have developed carcinomatosis with development of varices and hepatic coma. Varices are common events in hemachromatosis as the cirrhosis advances to a very malignant form. Hepatic coma is the common cause of death. But there isn't sufficient information available to rule in or rule out this rare possibility. Alcoholic or post necrotic cirrhosis with superimposed hepatoma would be an attractive explanation. Hepatoma was initially thought to occur only rarely in association with nutritional cirrhosis, but as we get further away from prohibition and more of these patients appear and are followed for longer periods of time, there is an increasingly higher incidence of hepatoma. Post necrotic cirrhosis can occur in the absence of any very striking clinical findings and can degenerate into a hepatoma without much fanfare and so this is a possibility. Fifty percent of hepatomas do metastasize, most commonly to the lungs but also to other parts of the body. We don't have a chest x-ray on this last admission so we can't exclude that possibility. Lymphoma and especially Hodgkin's disease should be mentioned as the primary disorder here. It is the lymphoma which is known to involve the ureter, producing extrinsic obstruction; it certainly produces splenomegaly and obscure abdominal pain and back pain from retroperitoneal involvement. It may involve the liver and produce jaundice and might be suppressed to some extent by Prednisone as occurred here. Dr. Diamond at the Memorial Hospital reported in the *American Journal of Medicine* in 1961 on 116 patients with Hodgkin's disease who became jaundiced. He commented that this was a very bad prognostic sign when it occurred and contrary to the previous experience in which jaundice was found to be most commonly related to extra-biliary obstruction; he found that the majority of these cases had direct involvement of the liver with the disease. One of these patients actually died in hepatic coma which was due to the Hodgkin's involvement rather than any other hepatic disease. Malignancy of the GI tract as a primary source of carcinomatosis in this case cannot be excluded. The last GI series was done two years prior to his death, and so we cannot say any more about that possibility. Finally, I am impressed by the possibility that this patient may have had carcinoma of the body or tail of the pancreas. The presence of mild diabetes over the course of the illness brings this tumor to mind and the relentless left upper quadrant and flank pain are characteristic. This is a very obscure lesion in which the most striking symptoms are often due to metastatic involvement of adjacent

structures. Jaundice is a late manifestation of the disease when the tumor involves the body and tail and an earlier symptom when it involves the head of the pancreas. I found one case of a patient having carcinoma of the tail of the pancreas with metastatic involvement of both distal ureters simulating primary ureteral carcinoma. Splenomegaly may occur, as may varices, due to direct invasion of the splenic vein and GI hemorrhage occurs not uncommonly due to direct invasion of the stomach wall with ulceration of the mucosa. The hepatic coma could be explained by tumor invasion of the liver or portal vein obstruction by tumor with shunting or portal blood or by an unrelated cirrhosis of the liver. Although we know that the patient had arteriosclerotic heart disease and although a recurrent coronary thrombosis could have accounted for his terminal episode of severe chest pain, I am inclined to attribute this to massive pulmonary embolus associated with his malignant disease. Since carcinoma of the pancreas is the tumor most closely associated with thrombo-embolic complications, I believe that this is what occurred.

So my clinical diagnosis is: *adenocarcinoma of the tail of the pancreas with metastasis to the right ureter, liver, and splenic veins; congestive splenomegaly; varices; and direct invasion of the stomach with or without cirrhosis of the liver; and terminal massive pulmonary embolus.*

Dr. Avery: Dr. Chapman did an unusually fine job in diagnosing a difficult case. The immediate cause of death was: massive pulmonary emboli. There was a primary adenocarcinoma in the pancreas, presumably from the body or the tail, which invaded the left adrenal gland, the spleen, and the left kidney. The tumor in the pancreas had invaded the posterior wall of the stomach with ulceration of the overlying mucosa and opening of multiple small vessels from which he bled. There was a transitional cell papilloma at the right uretero-vesical junction. The ureter was dilated and there was moderate inflammation and scarring in the surrounding ureteral tissue. The urinary bladder proper was relatively normal. The heart had a myocardial infarct (left ventricle) of approximately three to four weeks of age.

Dr. Chapman: Then this ureteral tumor is a second tumor and not a metastatic one.

Dr. Avery: Yes, this is a second primary tumor not related to the carcinoma in the pancreas.

Dr. Margolius: Was the enlarged spleen due to tumor invasion or was there portal obstruction?

Dr. Avery: The spleen was congested, and there was tumor in the capsule.

Dr. Chapman: I wonder where his pseudo-hepatic coma came from. Could he have had enough involvement of his extrahepatic portal vein to cause ammonia intoxication on that basis? Was there a lot of blood in his gut? Could the portal blood have been shunted around his liver?

Dr. Avery: Yes, there was blood in the gut. The portal area was massively involved with tumor.

Dr. Chapman: That may have been the explanation. It is the only clinical explanation I have for the coma which certainly appeared to relate to the ammonia level. They cleaned his gut out with cathartics and gave him Neomycin, and he woke up.

Dr. Levy: What was the size of the liver?

Dr. Avery: The liver was slightly enlarged, weighing 1600 grams. The liver grossly and microscopically looked relatively normal except for bile stasis and plugged bile ducts.

Dr. Chapman: Apparently invasion of the wall of the stomach with hemorrhage on that basis is common with this tumor.

Dr. Chapman: The only thing that disappoints me is that the lesion of the distal

ureter is not metastatic. You are pretty sure of that diagnosis, Dr. Avery?

Dr. Avery: Yes. This is a transitional cell papilloma and microscopically in no way resembles the adenocarcinoma in the pancreas.

Dr. Chapman: How effective are Papanicolaou stains of the urine for picking up malignant tumors in the genitourinary tract?

Dr. Avery: Papanicolaou stain of an optimum urine specimen will detect approximately 80% of the papillary tumors of the GU tract. However, they will detect virtually none of the clear cell carcinomas of the kidney.

Dr. Margolius: What are the newer studies of carcinoma of the pancreas involving arteriography? Do they seem very helpful?

Dr. Chapman: I think they can be helpful in certain instances. I do not know the percentage of effectiveness. The pancreatic scans have been disappointing because the liver picks up the isotope as well. Certain clinical points are interesting in association with carcinoma of the pancreas and are worth remembering. The most fascinating one of all is the agitated depression these patients sometimes develop. This association is so striking that it has been reported by a great many authors, and we have certainly seen patients develop depressive symptoms which seem to be out of proportion to the amount of abdominal pain they are having. They are sometimes seen by psychiatrists and on occasions have received shock therapy with improvement. They usually have some obscure GI complaints, but many depressed patients have obscure GI complaints. They go through all the usual studies, which are all negative. Later abdominal carcinomatosis becomes evident. Another interesting finding, of course, is the relationship of this tumor to pulmonary emboli. It has been recognized that this is certainly not a situation that occurs only in carcinoma of the pancreas. Embolization occurs with other tumors as well, but it seems to occur in a high percentage of patients having carcinoma of the pancreas.

Dr. Levy: How do you explain the pain in carcinoma of the pancreas.

Dr. Chapman: The first symptoms of pain from carcinoma of the pancreas are usually due to infiltration of nerve roots in the retroperitoneal area and can produce back pain which is aggravated by hyperextension and relieved by lying on the side with the knees drawn up.

Mental Health . . . .

KURT T. SCHMIDT, M.D.

On Existentialism and Existential Psychiatry

Over the last fifty years existentialism has made a great impact on art and literature. In psychiatry, the existential attitude stemmed from dissatisfaction with current methods for gaining accurate scientific understanding of mental illness. Man was (and still is) always reduced to a biological object that was observed, dissected in chemical or physical reactions, in sets of mental mechanisms or phenomena, inevitably leaving out his basic attribute, his "existence" (Dasein).

Existential psychiatry, an effort to combine harmoniously science and humanism evolved in two steps: One phenomenologic, the other existential. The basic concept in existential psychiatry is the understanding of man as committed to his biological factuality and yet free to choose his mode of authentic or inauthentic existence (to fulfill or not fulfill his potentialities).

Soeren Kierkegaard (1813-55), a Danish theologian and philosopher, gave impetus to the existential movement. His concern for existence appeared as a direct protest against Hegel's dialectic view of the world and against his rationalist system of identifying abstract truths with reality and equating pure thought with being. Kierkegaard distinguishes "pure", "abstract" and "existential" thoughts and his opposition was to "pure" thought rather than to the abstract thought of science. Kierkegaard's influence, first felt on theology, permeated the philosophical world after World War I. (Villeneuve).

The phenomenological methology of Husserl (1859-1938) was a reaction against the positivist philosophy evolving from the technical discoveries of the 19th century which accentuated the dichotomy between subject and object. Husserl's guiding principle was that things are as they appear, are as they seem to be "in our consciousness" (Villeneuve). Husserl like Freud was a student of Brentano, Professor of Philosophy and Psychology at the University of Vienna and a contemporary of Nietzsche. Incidentally, both students (Freud and Husserl) were driven by the same messianic aim (Serban) of making a science, one out of psychology, the other one out of philosophy. Husserl greatly influenced Heidegger and his student Sartre, the main exponents of atheist existentialism. Heidegger directly influenced Ludwig Binswanger in the development of his existential analysis.

What is existentialism?

Existentialism is the belief that the truth most worth having is not grasped by objective knowledge or carefully defined ideas but by man's own passionately involved existence. Truth exists for the individuals only as he produces it in action. Truth cannot be found in abstract theory (Hegel) but only in existence.

In turn, existence precedes essence. Sartre and his followers feel that man first of all exists (emerges), encounters himself, surges up in the world and defines himself (his essence). Man is nothing else but what he makes of himself. In other words, man is, a priori, not definable because to begin with he is nothing (he has no essence yet).

If it is true that existence precedes essence then man is responsible for what he is. He did choose what he wanted to be and that is where his freedom is (Jaspers: eligo ergo

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sum or Fromm: Man's freedom lies in his acting on the basis of the awareness of alternatives and their consequences). Freedom, according to Sartre, is equated with the opportunity to choose which in turn promotes action for which man is responsible and therefore can no longer blame his instinctual drives, hereditary and/or environmental factors for it. Action presupposes that there are several possibilities (at least two) and in choosing one of them one realizes that it has value only because it is chosen. Man exists only in so far as he realizes himself. He is therefore nothing else but the sum of his actions, nothing else but what his life is. No one is born a hero or a coward. A hero or a coward is defined by the deed he has done. Thus a coward is responsible for his cowardice and can not blame heredity, his environment or his unconscious drives for it. The existentialists say that the coward makes himself cowardly, the hero makes himself heroic. In essence, existentialists feel that thought alone is nothing, action is everything. What counts is the total commitment (Sartre). Existentialism defines man by his action and therefore the destiny of man is placed within him.

From an existentialistic point of view, cogito ergo sum means self-awareness, one's immediate sense of one's self. Existentialism does not make man an object but preserves his dignity as a subject. Furthermore, the man who discovers himself directly in the cogito also discovers himself in the others. He recognizes that he can not be anything unless others recognize him as such. One can not obtain any truth about one's self except through the medium of another (amo ergo sum). "Man exists not in his isolation but in the completeness of the relation between man and man; what humanity is can be grasped only in vital reciprocity." (Buber). All the existentialists, regardless of their approach to the ontology of being, reached in finality the same conclusion in reference to the process of human self-realization. For all of them freedom of man becomes the keynote to the solution of man's becoming himself, of man's possibility of expressing his potentialities (Serban).

Now then, what is existential psychiatry?

Existential psychiatry has been called a theory, a school and a technique. In fact, it is none of these. Simply stated, it is an emphasis, an approach and an attitude (Mendel). Because existentialism is more a philosophy than a method, its implications for psychiatry have been viewed with some skepticism. Nevertheless, a growing number of psychotherapists subscribe to existential tenets and testify to the value of this approach (Rollo May and E. Straus).

The existential approach to the study of man recognizes the driven aspect of the biological man in society. However, it insists that there is more to being a human being than coping with biological urges or adjusting to the social situation. It conceives of the individual choosing and making his world rather than adjusting to reality or succumbing to it. The existential view holds that the world is part of the existing human being, that he is part of it and that he makes his world. (Unwelt, Mitwelt, Eigenwelt)

Consequences of existential emphasis (Mendel):

1. The history of the patient, it seems, is an ever-changing process which has a validity in the present moment only as it effects the present. There is an awareness that history is constantly revised in terms of the present and the future.
2. The future is understood in terms of its influence on the present. The future is seen as more than the natural consequences of the past. It is recognized as a vital and strongly influential aspect of human existence in the present moment.
3. The therapeutic encounter (notice the term!) is understood as unique and real and as more than a shadow



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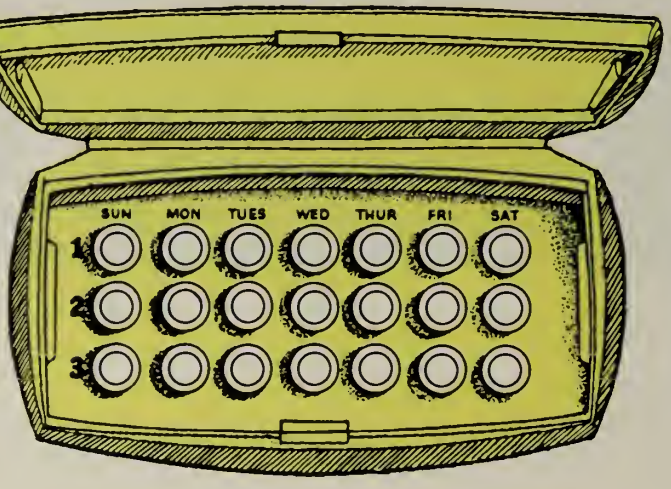
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A increased risk of thromboembolic disease associated with the use of hor- o l contraceptives has now been shown in studies conducted in both Great n and the United States. Other risks, such as those of elevated blood pres- r, liver disease and reduced tolerance to carbohydrates, have not been quan- a d with precision.

L g-term administration of both natural and synthetic estrogens in subpri- a animal species in multiples of the human dose increases the frequency of r animal carcinomas. These data cannot be transposed directly to man. The o ble carcinogenicity due to the estrogens can be neither affirmed nor refuted s time. Close clinical surveillance of all women taking oral contraceptives u be continued.

I ication—Demulen is indicated for oral contraception.

C ntraindications—Patients with thrombophlebitis, thromboembolic disorders, or ral apoplexy or a past history of these conditions, markedly impaired liver n on, known or suspected carcinoma of the breast, known or suspected t gen-dependent neoplasia and undiagnosed abnormal genital bleeding.

W rnings—The physician should be alert to the earliest manifestations of r botic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary m lism and retinal thrombosis). Should any of these occur or be suspected e rug should be discontinued immediately.

R rospective studies of morbidity and mortality in Great Britain and studies o bidity in the United States have shown a statistically significant associa- b etween thrombophlebitis, pulmonary embolism, and cerebral thrombosis n mbolism and the use of oral contraceptives. There have been three princi- al udies in Britain[1-3] leading to this conclusion, and one[4] in this country. The t ate of the relative risk of thromboembolism in the study by Vessey and c was about sevenfold, while Sartwell and associates[4] in the United States d a relative risk of 4.4, meaning that the users are several times as likely to r go thromboembolic disease without evident cause as nonusers. The n ican study also indicated that the risk did not persist after discontinuation f lministration, and that it was not enhanced by long-continued administra- o The American study was not designed to evaluate a difference between r cts. However, the study suggested that there might be an increased risk of r boembolic disease in users of sequential products. This risk cannot be u itated, and further studies to confirm this finding are desirable.

f continue medication pending examination if there is sudden partial or o lete loss of vision, or if there is a sudden onset of proptosis, diplopia or r ine. If examination reveals papilledema or retinal vascular lesions medica- c should be withdrawn.

S ce the safety of Demulen in pregnancy has not been demonstrated, it is e mmended that for any patient who has missed two consecutive periods r nancy should be ruled out before continuing the contraceptive regimen. If n patient has not adhered to the prescribed schedule the possibility of preg- a y should be considered at the time of the first missed period.

S mall fraction of the hormonal agents in oral contraceptives has been iden- fi in the milk of mothers receiving these drugs. The long-range effect to the u ng infant cannot be determined at this time.

P cautions—The pretreatment and periodic physical examinations should in- le special reference to the breasts and pelvic organs, including a Papanico- la smear, since estrogens have been known to produce tumors, some of them m gnant, in five species of subprimate animals. Endocrine and possibly liver f ion tests may be affected by treatment with Demulen. Therefore, if such a are abnormal in a patient taking Demulen, it is recommended that they e peated after the drug has been withdrawn for two months. Under the in- C ce of progestogen-estrogen preparations preexisting uterine fibromyomas n increase in size. Because these agents may cause some degree of fluid re- tention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Demulen may mask the onset of the climacteric. The pathologist should be advised of Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids:

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

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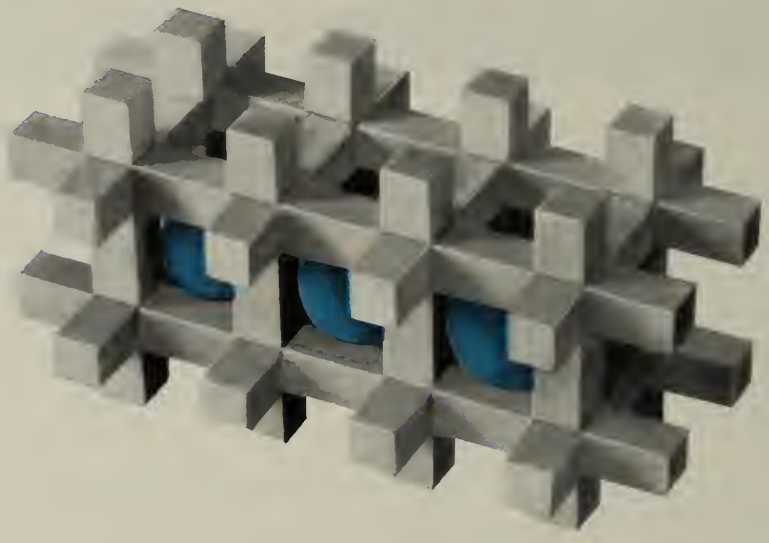
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of prior relationships. The existential view emphasizes the here and now.

4. Conscious thoughts and productions of the patient are elevated to a position of primary importance and are seen as much more than the mere screens of underlying unconscious processes. Likewise, the existential therapist values the manifest dream contents more than the latent ones. E. Straus once stated that the unconscious ideas of the patient are more often than not the conscious theories of the therapist. The existential therapist looks at the conscious production of the patient as describing the world of the patient. He is immensely interested how the patient constructs his world in terms of time, space and causality.
5. Emphasis in the therapeutic transaction is on action. The patient needs experience, not interpretation. Learning and change occur only through activity. Change, according to the existential approach, does not occur by reliving the original trauma and re-experiencing the original affects. It does occur through a change in the present transaction which then allows for a review of the past.

G. Allport eloquently reminds us that "people, it seems, are busy leading their lives into the future, whereas psychology for the most part is busy tracing them into the past." Existential theorists have proposed that the future and the past meet in the present to form the moment of action.

Existential psychiatry emphasizes freedom in the transaction, rather than determinism from the past. Perhaps one of the primary and most important forces in the therapeutic transaction is the opening of the future ("open-end technique" by Mendel). Thus, for example in a five year treatment study by Mendel and Rapport it was possible to demonstrate that in a population of 160 ambulatory schizophrenics the most important aspect of the treatment was the fact that they had a new appointment given to them each time. Although they were seen for only 20 minutes once a month and many of them were seen by untrained therapists, the future was open through action. An appointment in one month was the therapeutic force which counteracted the schizophrenic's view of the world as closed and as without a future.

In summary, existential psychiatry chooses for its selective attention and therapeutic intervention that part of behavior which is free, new and unique in each of us. Man is seen as present to himself (Dasein), rooted in the ahistoric here and now, defined and described by his responses, acts and commitments. He can not hide, as he might in Freudian theory, in the deterministic past, about which he can plead ignorance and claim no responsibility. Braced by the exhilaration of his freedom, existential man must face the anxiety of the choices he makes, the pain of his awareness, the responsibility to himself and others in the broad, selectively determined present (Correnti). This is in contrast to the psychoanalytical approach which is primarily concerned with the part of human behavior which is driven, and which is similar in all human beings. Either approach, if seen as the total understanding of human behavior, leads to a constricted view. If the two approaches are used in complement they can widen and deepen our understanding of man's existence.

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Public Health....

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Drug Abuse in Virginia

The serious problem of drug abuse by all segments of American society, particularly among young people, requires that physicians, as well as all other health personnel realize their responsibilities in the prevention and control of drug abuse. Examples of the problem's scope can be found every day.

The following articles recently appeared in a local newspaper:

A youth testified at a New York state legislative committee hearing yesterday on drug addiction and how he supported it. The witness sat on his doctor's lap while he spoke.

"I used to see all my friends do it, so I didn't want to be left out," a 12-year-old boy named Ralph said as he explained to the committee how he turned to heroin after sniffing glue and cleaning fluid and smoking marijuana.

The 4-foot-tall, 60-pound addict said he sold drugs to adults and other youngsters at a Bronx elementary school, and also supported his habit by stealing purses, breaking into stores and helping older friends mug people.

Ralph sat silent on the lap of Dr. Judianne Densen-Gerber, clinical director of the Odyssey House addict treatment center, while she told of her efforts to get more funds to expand the center's program for child addicts.

* * *

A Bronx grand jury yesterday indicted two men for second-degree manslaughter and criminally negligent homicide in having given a 17-year-old Barnard freshman heroin from which she died.

* * *

Reading these articles many Virginians perhaps were unconcerned because the incidents happened in New York and it was believed that they could not happen here. Several years ago this conclusion might have been correct. A Virginia Mental Health Study Commission report a few years ago made no mention of drug abuse or addiction as a problem.

Times have changed in Virginia, although only drug abuse cases in serious trouble with the law are reported. The State Board of Pharmacy Report for 1969 shows only 233 charges relating to drug abuse. A breakdown by drugs involved shows: Marijuana, 107; Heroin 88; and other drugs, such as LSD and Mescaline, 38. In five metropolitan Virginia police departments there were 1,717 narcotic or drug investigations completed in 1969 resulting in 930 arrests. Of this number *224 were under the age of eighteen* and were handled through the juvenile justice system. It can be assumed that there were many more cases of drug abuse since those reported are only the few cases coming to the attention of the law. *Virginia definitely has a drug abuse problem.*

Prevention

As with any other public health problem, the major emphasis should be on prevention. The keystone of prevention is an informed public—especially parents, teachers and young people. If we are going to solve the drug problem, we must do so through an effective educational process; one that can be accepted. Such an effort must be made on a broad front involving the cooperative efforts of all agencies with teaching and public information capabilities.

As a part of this educational effort we should know who is involved:

Users—They may be anyone—students, businessmen, or housewives. They may be users of any drug to any degree: situational users (amphetamines to keep awake at exam time); spree users ("kicks" on weekends); hard-core users (who are the "hooked" addicts.)

Pushers—Are "mothers," and usually are hard-core users who sell drugs in their locality, chiefly to support their habits.

Racketeers—Are those at the top who do not usually use drugs but make fortunes by supplying them to the pushers. $350 worth of drugs, or 10 pounds of raw opium sold to an underworld broker in Turkey will produce 45,000 bags of heroin which will gross $225,000 in the United States when sold at $5.00 a bag.

Legislation

Appropriate punitive legislation for pushers should be enacted, especially for those who deal with juveniles. Severe punitive legislation should be enacted against racketeers.

In this regard the proposed Federal Drug Abuse Bill is seriously deficient. Recent national medical publications have carried articles with headlines such as "Dangers in the Drug-Abuse Bill" and "Medical Discontent with Proposed Drug Control Bill". The text of these articles is that the proposed measure gives the Attorney General vast authority over psychotropic agents and would substitute concepts of law-enforcement for principles of medical management in areas of drug abuse. The proposed bill as written repeats the mistakes of the past, including that of viewing the treatment of most drug-abuse cases as law enforcement problems rather than medical problems.

To be effective, drug laws must distinguish between users, pushers, and racketeers and must provide help for the users (especially the young), severe penalties for pushers and the most severe penalties for racketeers.

Treatment and Rehabilitation

Clinics must be provided to counsel situational users, spree users, and especially juveniles when they or their parents first become concerned and before they are "hooked".

Of course treatment must be provided and rehabilitation instituted for those who are "hooked" even though it is recognized that up to the present time no method of treatment and rehabilitation has been very successful for this group.

Every practicing physician should acquaint himself with the drug abuse problem in his community and become involved in action programs. The family physician could be the first person to save a life from drug addiction.

Diagnostic Laboratory Medicine....

CHARLES W. MONCURE, M.D.

The Immunochemical Diagnosis of Malignancy

The laboratory diagnosis of malignancy, in general, relies on one of two biological events: (1) detection of either biochemical alterations which may be reflected in impairment of normal function, or (2) identification of specific products which are produced by the tumor. Diagnostic tests which reveal functional alterations are subject to variation in nonneoplastic disease and, therefore, have limited specificity. Furthermore, such tests often are not positive until the disease has progressed to a stage of physiological impairment.

Those tests which detect tumor products are more specific and sometimes more sensitive than the usual detection methods, thus providing potentially an early diagnosis. Until recently, available tests for tumor products have been exceedingly limited. Some tumors, such as pheochromocytomas, choriocarcinomas, and carcinoids, are known to produce hormones. A few, such as prostatic carcinoma, elaborate enzymes which may assist in establishing a diagnosis. These hormones and enzymes are detectable by virtue of their specific biological activity. Unfortunately, our dependence on such activity has limited our efforts to identify tumor products.

The introduction of immunochemical assays may open the door to a more extensive battery of diagnostic procedures. Immunochemistry depends not on functional specificity but on biochemical structural specificity which imparts to each protein its own unique antigenicity.

Further development of immunochemical tests for cancer, therefore, depends on the characterization of substances of tumor origin which possess unique antigenic structure. The antigenic constituents of a tumor are listed in Table 1.

TABLE 1

Tumor Cell Antigens

A. Non-Diagnostic Antigens
   1. Heterogenetic Antigens
   2. Species Specific Antigens
   3. Isoantigens

B. Diagnostic Antigens
   1. Tumor Neoantigens
   2. Carcinoembryonic Antigens
   3. Organ Specific Antigens

Non-Diagnostic Antigens

There is a group of antigens which is present in all tissues including heterogenetic antigens, species specific antigens, and isoantigens. Heterogenetic antigens, by definition, are antigenic substances which occur in more than one species. Species specific antigens are restricted to a single species and are present in all members of that species. Isoantigens, by contrast, vary within the species in which they occur; these are exemplified by blood group substances and histocompatibility antigens. All antigens in these groups are ubiquitous in their distribution, and because of lack of other specific characteristics, are of little diagnostic value.

Diagnostic Antigens

Other antigens occurring in tumors may be useful for immunochemical diagnosis. These include tumor neoantigens, carcinoembryonic antigens, and persistent organ specific antigens.

Neoantigens

The existence of tumor specific neoantigens has been suspected since 1929 when

Supported by American Cancer Society CI-13. Dr. Moncure is an Advanced Clinical Fellow of the American Cancer Society.

Witebsky[1] reported the detection of a tumor specific substance. Preliminary studies have indicated that such antigens may be associated with human malignancy. Further investigation has led to a revision of earlier views since these antigens are present also in nonneoplastic tissue. As a result, the original work of Witebsky has been questioned.[2]

Since the identification of neoantigens in human malignancy is in doubt, they are not yet useful in the diagnosis of human cancer. It should be noted that the definitive identification of neoantigens in human tumors would favor the theories of viral oncogenesis as most experimental tumors exhibiting these antigens have been induced through viral transformation following incorporation of viral DNA into the cell genome.

Carcinoembryonic Antigens

Unlike neoantigens, these antigens have been identified in human neoplasms and already provide a basis for a few new diagnostic procedures. They are substances which are present in embryonic as well as neoplastic tissues, but absent in normal adult tissue. Presumably, they might arise through a regressive change which allows malignant cells to reactivate metabolic pathways normally restricted to embryonic tissues. Three such antigens, the "Regan isozyme", α_1 fetoglobulin and an antigen to carcinoma of the colon, are now being employed on a limited basis for the diagnosis of cancer.

The first of these is the "Regan isozyme". This unusual heat stable form of alkaline phosphatase was first detected in the serum of a patient with carcinoma of the lung[3] and subsequently shown to be biochemically and immunologically identical to placental alkaline phosphatase.[4] It has now been detected in the serum of patients with carcinoma of the lung, gastrointestinal tract, ovary, uterus, and in a few patients in which the tissue origin of the tumor was not discovered. Although it is also present in the serum of pregnant women, it has not been demonstrated in individuals with other nonneoplastic conditions. It may be identified in serum or tissue by means of immunochemical procedures or selective heat degradation.

The second carcinoembryonic antigen is α_1 fetoglobulin, a glycoprotein normally present in fetal blood but which disappears shortly after birth;[5] this antigen is thought to be produced by fetal liver. It has been shown to be present also in patients with certain types of carcinoma. Most of the patients with α_1 fetoglobulin have proven primary hepatomas.[6] However, its presence has also been associated with gonadal malignancies in childhood. At present, it can only be determined by immunochemical techniques.

The third well defined carcinoembryonic antigen is a sulfoglycoprotein described by Gold et al.[7] which seems to be associated exclusively with carcinoma of the colon. It is of interest that this antigen was first thought to be a real tumor specific antigen, possibly a neoantigen. It is now evident that it is also present in fetal tissue.[8] This finding demonstrates the necessity of ruling out carcinoembryonic antigens in the search for neoantigens of possible viral origin.

Organ Specific Antigens

These antigens may be useful in diagnosis, but they lack the high degree of specificity for neoplasia found in neoantigens and carcinoembryonic antigens. Yet, this group provides a much larger source of potentially valuable substances. It has been known for many years that neoplasms tend to become biochemically undifferentiated in the same way as they lose their morphological differentiation. Furthermore, the suggestion has been made that the loss of tissue specific antigens may be a characteristic of malignancy.[9] While this antigen loss does occur in many tumors, it does not always happen, as many malignant cells continue to synthesize organ specific substances.

Table 2 lists several tissues known to possess organ specific antigens which persist in tumors involving these tissues.

The production of immunoglobulins by the malignant cells of multiple myeloma is characteristic of that disease and immuno-

Table 2

Tissues Giving Rise to Tumors Possessing Organ Specific Antigens

1. Immunocytes
2. Chorion
3. Thyroid
4. Prostate
5. Stomach
6. Muscle
7. Colon
8. Breast

electrophoresis or quantitative immunodiffusion now provide our most precise means of establishing this diagnosis. Similarly, choriocarcinoma is readily identified by its elaboration of chorionic gonadotrophin. This hormone can be detected by bioassay or by immunoassay. The same is true of thyroid carcinomas which may elaborate thyroglobulin.

Recently, we have demonstrated at the Medical College of Virginia that prostatic acid phosphatase is antigenically different from other forms of this enzyme.[10] Immunochemistry can thus differentiate prostatic carcinoma from other tumors. It is noteworthy, however, that we have also identified another prostatic specific antigen which as yet has not been detected in malignant tissue.

Lynraven and deBoer[11] have demonstrated a gastric specific mucin and have identified its persistence in carcinoma of the stomach by immunofluorescence. This immunochemical technique has also been employed to identify myosin in tumors[12] and aids in the diagnosis of rhabdomyosarcomas and Wilms' tumors.

Colonic carcinoma, as previously mentioned, contains a unique carcinoembryonic antigen. This colonic tissue appears to contain, in addition, organ specific antigens which may persist in cancer.[13]

In the Russian literature, Karamova[14] has reported the development of an antiserum against normal breast tissue which selectively reacts with carcinoma of the breast as well as with normal breast tissue.

Liver, kidney, lung, aortic intima, testis, pituitary, adrenal, heart, and brain have now been shown to contain tissue specific antigens, and this list is constantly growing through the efforts of basic immunology research groups. It remains for the clinical scientist to evaluate these antigens and select those which may be applicable to the early diagnosis of cancer.

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SINGLE LEFT SUPERIOR VENA CAVA—
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(*Continued from page* 433)

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MONHTHLY REPORT OF BUREAU OF COMMUNICABLE DISEASE CONTROL

	May 1970	May 1969	Jan. May 1970	Jan. May 1969
Brucellosis	—	5	17	18
Diphtheria	—	—	1	—
Hepatitis	114	38	356	171
Meningitis (Aseptic)	—	1	1	5
Meningococcal Infections	5	7	25	39
Poliomyelitis	—	—	—	—
Rocky Mt. Spotted Fever	4	9	6	9
Rubella	150	457	600	1064
Rubeola	556	66	1511	616
Tularemia	—	1	—	1
Typhoid	—	—	1	—
Rabies in animals	19	26	145	247
Venereal Disease:				
Syphilis	124	95	566	620
Gonorrhea	1167	889	5238	4644
Other	0	4	8	16

Medicare - Part B . . . .

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Richmond, Virginia

Drugs and Biologicals

Parenteral medication is covered by Medicare providing certain conditions are satisfied. The following is a synopsis of coverage found in Section 6103.1 of the Part B Manual. For those interested, the nearest Social Security Office has the complete instructions available for inspection.

Drugs and biologicals are covered only if they are of the type that cannot be self-administered; they are not excluded as immunizations; they are reasonable and necessary for the diagnosis or treatment of the illness or injury for which administered according to accepted standards of medical practice and the drug is administered by the physician or his nurse under his personal supervision.

Prescription and non-prescription drugs and biologicals purchased by or dispensed to a patent are not covered.

Whether a drug or biological is of a type which cannot be self-administered is based on the usual method of administration of the form of that drug or biological as furnished by the physician. If a physician gives an injection which is usually self-injected, this drug is excluded from coverage, unless administered to the patient in an emergency situation.

Vaccinations or inoculations are excluded unless they are directly related to the treatment of an injury or direct exposure to a disease or condition. In the absence of injury or direct exposure preventive immunizations (vaccinations or inoculations) are not covered. Flu injections are excluded from coverage.

To be covered, the injection must be reasonable and necessary for the diagnosis or treatment of an illness or injury. Determinations as to whether an injection is reasonable and necessary are made on the same basis as all other such determination; with the advice of medical consultants and with reference to accepted standards of medical practice in the medical circumstances of the individual case.

Included below are guidelines identifying four categories of situations in which injections would not be reasonable and necessary according to accepted standards of medical practice.

1. Injections which are not considered by accepted standards of medical practice to be indicated as a *specific* or *effective* treatment for the particular condition (although the injection may be accepted tretment for another condition) are not considered reasonable and necessary.
2. Injections given for a purpose other than for treatment of a particular condition, illness, or injury are not covered. For example, the entire charge for a vitamin injection given simply for the general good and welfare of the patient and not as accepted therapy for a particular illness is excluded.
3. Where the injection is not considered an indicated method of administration according to accepted standards of medical practice for the condition for which given, it is not covered. (*Comment: it is perhaps in this general area that Medicare administration encounters many of its problems in that many times the injections are administered with no indication as to why the more accepted oral medication was not used.*)
4. Medication administered for treatment of a disease which exceeds the frequency

(*Continued on page* 460)

Schering

After only one year:

Administered to more people than live in Lynchburg and Newport News.*



Injectable Garamycin®

brand of gentamicin sulfate injection

An estimated 208,000 patients have received GARAMYCIN Injectable to date. The combined population of Lynchburg and Newport News is 193,000. (Estimated 1969 figures from The New York Times Encyclopedic Almanac 1970.)

See Clinical Considerations section on last page...

Mounting acceptance in the hospital...

Proven clinical effectiveness



Respiratory Infections

Outstanding results in serious gram-negative respiratory infections[1,2]

GARAMYCIN Injectable may prove successful where other antibiotics have failed.



Urinary Tract Infections

Strikingly effective in selected urinary tract infections[3]

With relatively low intramuscular doses, the promptly attained levels of GARAMYCIN achieved in the urine are considerably higher than the concentrations required for effectiveness against virtually all susceptible gram-negative pathogens. (Appropriate precautions are indicated in patients with impaired renal function; consult Package Insert for full details.)



Septicemia

May be lifesaving[4-6]

Numerous investigators have drawn attention to the value of GARAMYCIN Injectable in the treatment of gram-negative septicemias, often complicated by shock. Many hospital strains of *Serratia* are susceptible.[6]



Wounds and Burns

Response may be dramatic in wounds and burns complicated by sepsis[7]

The established efficacy of GARAMYCIN Injectable against *Pseudomonas*—as well as most other gram-negative pathogens—makes it an especially useful agent in the treatment of infected wounds and burns.

Important Precautionary Note Patients receiving treatment with GARAMYCIN Injectable (gentamicin sulfate injection) should be under close clinical observation because of the toxicity associated with the use of the drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with preexisting renal damage, treated with GARAMYCIN Injectable for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with preexisting renal damage.

This drug should be limited to the treatment of serious infections caused by susceptible gram-negative bacteria, with due regard for relative antibiotic toxicity. (See Clinical Considerations section.)

Mounting evidence in the laboratory...

Schering

Over 95% gram-negative pathogens sensitive.*

No other antibiotic performed comparably *in vitro* against gram-negative pathogens.
In a nationwide culture audit of antibiotic sensitivity patterns, sensitivity reports from 106 hospitals, geographically representative by census tract and of varying sizes, were analyzed. During the three-month period, ***every*** gram-negative culture slip from ***every*** hospital was surveyed. The total number of cultures involved in the audit was 97,091. The total number of sensitivity determinations was 643,503.

Pathogens	Percentage of sensitive strains Number of strains tested Antibiotics*							
	Garamycin	Kanamycin	Cephalothin	Cephaloridine	Ampicillin	Colistimethate	Chloramphenicol	Tetracycline
Klebsiella pneumoniae	99.5% 962	84.7% 992	86.2% 995	76.1% 67	32.7% 1,020	96.3% 640	82.9% 1,028	77.1% 1,026
Aerobacter aerogenes	95.9% 2,739	86.1% 2,818	53.5% 2,985	58.8% 1,514	22.7% 3,066	88.6% 2,603	85.8% 3,071	67.8% 2,981
Klebsiella aerobacter group	98.8% 566	83.9% 547	66.1% 522	60.5% 276	28.0% 553	89.5% 560	86.2% 587	62.8% 433
Klebsiella, all others	92.7% 2,944	83.3% 3,186	77.4% 2,976	67.5% 627	13.5% 2,883	95.0% 2,105	81.6% 3,212	70.6% 3,063
Pseudomonas aeruginosa	91.6% 4,528	29.8% 4,460	6.6% 4,418	6.6% 1,279	6.0% 4,360	91.3% 3,852	26.9% 4,608	26.4% 4,404
Proteus, indole-positive	91.8% 1,031	85.8% 1,062	39.9% 981	54.1% 364	40.2% 1,042	10.3% 758	76.1% 1,096	42.1% 1,051
Proteus mirabilis, indole-negative	94.9% 3,272	90.1% 3,378	83.1% 3,290	77.5% 975	78.0% 3,274	8.8% 2,634	85.9% 3,469	26.8% 3,278
Proteus, unspecified	96.2% 1,335	85.8% 1,371	71.7% 1,434	70.0% 647	64.7% 1,435	11.2% 1,233	76.0% 1,421	22.4% 1,298
Escherichia coli and all other Escherichias	96.4% 12,557	91.4% 12,818	87.8% 12,686	88.8% 4,251	74.6% 12,899	95.4% 10,623	94.1% 13,086	70.0% 12,559
Paracoiobactrum, all	93.4% 303	88.9% 325	62.0% 305	74.2% 62	43.8% 340	80.9% 215	87.1% 350	72.6% 340
Coliform bacteria	99.0% 593	91.2% 649	81.5% 637	66.7% 21	52.7% 624	95.6% 607	91.6% 678	76.1% 637
Totals	95.1% 30,830	80.5% 31,606	65.3% 31,229	68.1% 10,083	50.3% 31,496	75.8% 25,829	79.7% 32,606	56.5% 31,070
Gram-positive (included for consistency with Package Insert, not an approved indication)								
Staph—S. aureus, coagulase-positive	97.4% 1,548	88.8% 1,458	97.7% 2,050	98.7% 636	61.1% 1,559	20.4% 628	94.4% 2,123	83.7% 1,966
Staph—S. aureus, unspecified	99.3% 993	92.8% 902	98.1% 1,289	95.3% 213	45.8% 1,153	29.3% 116	96.4% 1,427	82.3% 1,360

*Adapted from a three-month, nationwide hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachusetts (mid-May to mid-August,1969).[6]
Antibiotics with significant gram-negative spectra are included. Organisms are listed as reported by laboratory.
Sensitivity testing was done by the disc method, a generally reliable test in the hospital setting. It should be noted, however, that the results with GARAMYCIN were somewhat higher than the results reported where the tube dilution technique was used. (See Clinical Considerations section which follows.) The concentration of the GARAMYCIN disc was 10 mcg.
Whereas standard testing methods were used by all hospitals, it is acknowledged that in a survey of this kind considerations such as differences in methodology are possible sources of error. The comparative percentage-sensitivity results derived from a survey of this kind are, therefore, not absolute. One should keep in mind also that the proper selection of an antibiotic is based not only on susceptibility testing but on relative toxicity and other clinical considerations as well.
It is felt, nonetheless, that the broad scope of the survey and the extreme care in data collection and tabulation permit a conclusion that the results are *generally* representative of current nationwide antibiotic sensitivity patterns.

Injectable Garamycin®
brand of gentamicin sulfate injection

See Clinical Considerations section on last page...

Injectable Garamycin®
brand of gentamicin sulfate injection

ADULT DOSAGE GUIDELINES

See definitive prescribing information in Package Insert.

Patients with Normal Renal Function

Total Daily Dose (administered in two, three, or four divided doses)			
	Less Severe	**Resistant/ Moderately Severe**	**Serious/Life-Threatening**
Urinary Tract Infections (due to susceptible strains of gram-negative bacteria)†	0.8-1.2 mg./kg. for 7-10 days	Larger doses or additional antibacterial therapy should be considered in severe urinary tract infections or in resistant cases involving the renal parenchyma or anatomic anomaly.	up to 5 mg./kg.
Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa,* and species of indole-positive and indole-negative *Proteus, Escherichia coli,* and *Klebsiella-Aerobacter.* Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa,* 828 (93%); *Escherichia coli,* 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: GARAMYCIN Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those pre-existing renal damage, treated with GARAMYCIN Inject usually for longer periods or with higher doses than recomme

GARAMYCIN Injectable is potentially nephrotoxic, and should be kept in mind when it is used in patients with pre-exi renal impairment. Kidney function diminished by infection of upper urinary tract may, however, improve during effective t ment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs suc streptomycin and kanamycin or of potentially nephrotoxic d such as polymyxin, colistin, and kanamycin with gentamicin su has not been shown to afford any clinical advantages and, more may result in additive toxicity. Monitoring of vestibular, coch and renal function will provide guidance for therapy in such c

Precautions: In patients with impaired renal function in w serious infection develops, serum concentrations of the drug rise, with consequently increased risk of ototoxicity. In these tients or in those in whom recommended dosage or duratio therapy must be exceeded as a life-saving measure, routine stu of kidney function should be performed when possible. These be supplemented by evaluation of the vestibular and auditory f tion and measurement of serum concentration of the drug w feasible. Serum concentrations of gentamicin should be mainta below the range of 10-12 mcg./ml. to reduce risk of ototoxicity

Ordinarily, treatment should not be given for more than 7 t days or be repeated unless required for serious infection no sponsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Inject may occasionally result in overgrowth of nonsensitive organism superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicit nephrotoxicity have not been established. Studies in pregnant mals have not revealed teratogenic or ototoxic effects in the f GARAMYCIN Injectable should not be used in pregnant patien in women of childbearing age unless its use is deemed advis by the physician.

Adverse Reactions: The overall incidence of ototoxicity consid related to treatment with GARAMYCIN Injectable was 2.8 per (16 of 565 patients). Contributory factors (two or more factors relevant to most patients) were as follows: 10 had azotemia received a total of 1 gram or more of the drug, 7 had recently ceived other potentially ototoxic antibiotics (streptomycin or k mycin), and 5 were over 60 years of age. Six also had decre high-tone hearing acuity, which returned to or toward norma the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients sho increases in BUN that were probably related to treatment GARAMYCIN Injectable. Of 20 increases probably or possibly rel to treatment, 7 were reversible, 9 occurred in terminal patients, 4 had no follow-up.

Other adverse reactions associated with treatment were one inst each of urticaria, decreased hematocrit, and reversible depres of granulocytes with normal bone marrow. Other rarely repo and possibly treatment-related adverse reactions were anemia creased reticulocyte count, rash, purpura, drug fever, hypoten convulsions, twitching, salivation, nausea, vomiting, increased t aminase activity (SGOT or SGPT), increased serum bilirubin, creased serum calcium, and joint pain.

Packaging: GARAMYCIN Injectable, 40 mg./cc., 2-cc. multiple- vials, for intramuscular administration.

References: (1) Brayton, R. G., and Louria, D. B.: Gentamici gram-negative urinary and pulmonary infections, Arch. Int. M *114*:205, 1964.* (2) Louria, D. B.; Young, L.; Armstrong, D., Smith, J. K.: Gentamicin in the treatment of pulmonary infecti J. Infect. Dis. *119*:483, 1969. (3) Cox, C. E.: Gentamicin, a aminoglycoside antibiotic: Clinical and laboratory studies in uri tract infections, J. Infect. Dis. *119*:486, 1969. (4) Groll, E.: Clin experience with gentamicin, data from 12 German clinics, in G tamicin: First International Symposium, Paris, January 1 Lucerne, Essex Chemie AG, pp. 121-128.* (5) Jackson, G. G.: Lab tory and clinical investigation of gentamicin, *ibid.*, pp. 62-74 Medeiros, A. E.: Discussion, J. Infect. Dis. *119*:533, 1969. (7) Polk, Discussion, J. Infect. Dis. *119*:529, 1969. (8) Three-month, nation hospital audit by R. A. Gosselin and Co., Inc., Dedham, Massachu (mid-May to mid-August, 1969).

*Dosage in this investigational study was less than now recommer in Package Insert.

For more complete prescribing details, consult package inser Physicians' Desk Reference. Schering literature is also avail from your Schering Representative or Medical Services Departm Schering Corporation, Union, New Jersey 07083.

AHFS CATEGORY 8:12.28

Woman's Auxiliary....

National President of WA/SAMA Is a Virginian

. . . Mrs. G. Edward Kappler (Robin) was installed May 8 as national president amid flags and flourishes. Robin says "I have a very exciting and educational year ahead of me and I am grateful to all in Virginia who made it possible. You took a New Yorker and made her a Virginian . . . and that's not so easy to do!" Mrs. Edward L. Lilly, (Linda) was installed as Regional Vice President of Region I, which includes the southeastern states. Dr. Kappler spoke on "What WA/SAMA Has Meant to Robin and Me." Mrs. M. Pinson Neal and Mrs. Richard Weymouth of the Richmond auxiliary presented Robin with a corsage along with our good wishes. May 9 a post convention national executive council luncheon was given by the Woman's Auxiliary to The Medical Society of Virginia with Mrs. Ralph Landes (Betty) of Danville serving as hostess along with Gail Neal and Beverly Weymouth. The Sally Tompkins chapter received awards for the best scrapbook and third in Newsletters of the year.

Many plans are in the making and we foresee only good things in the future. Robin's theme for 1970-71 is Communications across the nation. She hopes to bring the national WA/SAMA home to the local level . . . where the action is.

Your President's Report to National

. . . "tells it like it is" in Virginia. In addition to achievements in longer established auxiliary programs, the twenty-four Virginia auxiliaries this year have continued and expanded an emphasis on children and youth begun last year.

An outstanding project of the Alexandria auxiliary for several years has been The Shoe Center, through which new and used shoes are collected and distributed to needy children. After careful planning the auxiliary has expanded this project by incorporating with a settlement house, Hopkins House, to supply not only shoes but outer clothing as well. Hopkins House is also supported by church and civic groups. Auxiliary financing for this project is budgeted at $1200.00. With the cooperation of school officials, the project hires needy, capable high school students from the home economics and vocational departments to repair the shoes and garments. The superintendent of schools has urged the continuance and enlargement of this project.

With support from school authorities and the medical society this same auxiliary has prepared a drug abuse teaching program to be used in elementary schools. After gathering, compiling information and setting up guidelines the auxiliary has the program ready for approval by school officials, and hopes that it will go into use in the schools for the 1970-71 year.

Nine other auxiliaries have reported activities concerning drug abuse. These have included the showings of two state auxiliary owned films, "LSD" and "Trip to Where". One auxiliary sponsored a program for the public; another joined two junior women's clubs to sponsor a panel of experts program, attended by 1600 people. The Roanoke auxiliary also purchased the film "LSD" and has shown it 73 times.

A county-wide bicycle safety program was sponsored by Northampton-Accomack in all the elementary schools. For each program a film was shown and a state trooper was present for discussion.

The Hampton auxiliary found very rewarding their project of conducting hearing tests for 2500 kindergarten children in 27 schools. Members were trained, audiometers were loaned by the health department and necessary referrals were made for those requiring treatment.

Their eighth annual antique show netted over $8000.00 for the Richmond auxiliary. After contributing $300.00 as health club scholarships and $100.00 to the Virginia Council on Health and Medical Care, they contributed remaining funds to the Virginia Home for incurables, Memorial Guidance Clinic for emotionally disturbed children, for scholarships at the Medical College of Virginia, and for diploma nurses training in Richmond hospitals.

Also, Richmond works with the Red Cross in coordinating "Youth Speaks Out" programs, and has held six workshops, on mental health topics, for parents of children in federally funded "operation uplift" in cooperation with public schools and the mental health association. Our state mental health chairman reports that three additional auxiliaries are planning similar workshops for parents.

Six other auxiliaries have reported giving nursing scholarships.

In Arlington, for a medical family night, youngsters were invited to accompany parents to dinner and to hear lecturer Salom Rizk speak on "America Is More Than a Country". Fairfax held a medical society family picnic; also had a "My Father the Doctor" poetry and art contest entered by 50 youngsters.

Three auxiliaries have helped equip pediatric areas in hospitals and served as pediatric volunteers.

As part of "Danville's Emphasis on Youth" the Danville-Pittsylvania auxiliary has helped establish a remedial reading clinic, an evaluation clinic for retarded children, and an in-service hospital program for high school students.

Commemorating the 100th anniversary of the Norfolk County Medical Society, the Norfolk auxiliary prepared an outstanding exhibit in the Norfolk Museum of Arts. Entitled "Memorabilia to Miracles" the display depicted a physician's office of yesteryear contrasted with an office of today.

Many more untold hours of volunteer service have been given and enjoyed by medical auxiliaries for better health throughout Virginia.

Mrs. Joseph M. Straughan, *President*

MEDICARE—PART B. DRUGS AND BIOLOGICALS

(*Continued from page 458*)

or duration of injections indicated by accepted standards of medical practice as an appropriate level of care for that condition is not covered unless there are extenuating circumstances which justify the need for additional injections. (*Comment: without an explanation of the medical need for injections which exceed the frequency or duration indicated by accepted standards of medical practice there would be no justification for considering the injections exceeding the standard dosage.*)

The allowable reasonable charges for covered injections should be determined in the same manner as for other Part B services—on the basis of the physician's customary charge for the injection not to exceed the prevailing charge in the locality for a similar service. However, where the physician's customary practice or the prevailing practice is not to make a separate or increased charge for injections in such situation, but to charge only the regular office visit fee, reimbursement should not include an additional allowance for the injection.

Editorial . . .

A Glance Backward to Medicine in Early Virginia

THE HAZARDS OF LIFE in early Virginia were extreme. Indians proved not to be the worst enemy of the colonists—instead famine and disease almost caused failure of the new world settlement. Sixty out of 104 colonists died the first year in 1607, twenty the next and seventeen the next. In 1610 three-hundred thirty-eight died, leaving only sixty individuals in the London colony at Jamestown. Between 1610 and 1618, six-hundred sixty-five lives were lost, but in 1618 the number of immigrants increased abruptly, averaging more than one thousand a year. By 1625 nearly eight thousand colonists had come from England to populate the Virginia woodland; however in February of 1625 only one-thousand ninety-five remained alive. Nevertheless, the population of Virginia rose slowly so that in 1635 there were approximately five thousand inhabitants. In 1681 the population was estimated at fifty-six thousand, and by the end of the century Virginia had between sixty thousand and seventy-five thousand settlers.

The London Company franchise ended in 1624. The physicians and chirurgeons sent to Virginia by the London Company were well trained and educated and probably had a great deal to do with the survival of this first English colony. Epidemics and diseases were the colonists' worst enemies, and Virginia had the advantages of well-educated medical talent, which probably represented British medicine to a high degree.

Captain John Smith has the dubious honor of sustaining the first burn of the New World referred to England for treatment. In 1609 he received a severe burn from a gunpowder explosion. At first it was not certain that Smith would live, and when it was determined that he would recover, he requested to return to England to obtain treatment for his burn. Whether or not Captain John Smith's burn was serious is not known. Several writers suspect that the burn was not severe and that Captain Smith used this as an excuse to get out of the Virginia Colony where he was embroiled with minor feuds and disturbances.

The first appointed physician general for the London colony was Dr. Lawrence Bohun, "Dr. in Phisick". Dr. Bohun was an industrious doctor, investigating the many medicinal qualities of the native herbs and plant life which grew abundantly in early Virginia. His most distinguished patient, Lord Delaware, had scurvy, and in 1611 took Dr. Bohun with him to the West Indies to obtain oranges and lemons to treat his disease.

It is not certain where Dr. Bohun spent the next few years, but in 1620 he was killed (while returning to Virginia) during a battle with a Spanish man-of-war. In 1621 Dr. John Potts came to take Dr. Bohun's place. Dr. Potts had excellent professional recommendations; however it is difficult to obtain a true picture of this man. During Dr. Potts first year in Virginia, the colonists (after making a treaty of peace with the Indians) were thought to have poisoned a great many of them. Dr. Potts was said to be the "chief actor in it". The Earl of Warwick called him "the poysoner of the savages thear". Although Dr. Potts' professional ability was never questioned, he was called into court on many occasions—once for killing a widow's hog that trespassed in his corn, and again when he apparently sued a patient for not paying his fee for medical attendance ("for curyng of Henry Boothe's eye"). Another time Dr. Potts appeared in a law suit against the secretary of the colony, claiming "certayne cowes"—"appertaining to ye place of physition". Dr. Potts won these cases and, in 1629, when the officially appointed Governor of the Colony returned to England, Dr. John Potts, Esquire, was then elected "governor of and for this colony of Virginia". This was the first time in the New World that a physician had held executive power. Dr. Potts is known as an excellent governor. He twice convened the assembly and passed important regulations for the defense of the colony. During his year as governor, twenty-three ships visited the English colony. Among his many visitors was George Calvert (Lord Baltimore).

In 1630 Sir John Harvey arrived to become governor of the colony. Apparently Dr. Potts could not curb his frank and irritating personality and the new governor soon had him arrested for "pardeninge willful murther; marking other men's cattell for his owne and killing up their hoggs." Dr. Potts was found guilty, however later the King granted him a pardon. Potts returned to his practice, but because Governor Harvey was one of Virginia's worst governors, Potts could not keep his hand out of politics. Dr. Potts finally assumed unauthorized command of the "Musketeers" and circulated a petition against the governor. Governor Harvey quickly seized Dr. Potts and put him in irons. Popular feeling was with Dr. Potts, however, and Governor Harvey was deposed by the colony and sent home to England. Dr. Potts went on the same ship with Harvey to present the colony's side of the case. The King, however, upheld his governor and returned him to the colony. Dr. Potts stayed in England to lobby against his enemy, and in 1639 had the satisfaction of seeing Sir Francis Wyatt displace Harvey.

Dr. Potts owned much land in Virginia and was the first to have dwellings at the persent site of Williamsburg. He was apparently the first doctor of the New World to be involved in major politics.

We can only hope that the courage and stamina of these early Virginia colonists still persists in our heritage, and that in these days of national peril from other causes, we physicians can speak and work for just causes —and once more become involved in politics.

CHARLES E. HORTON, M.D.

Norfolk Medicine—Old and New

THIS ISSUE of the Virginia Medical Monthly is devoted to scientific articles from the Norfolk Medical Center and several historical papers dealing with Norfolk's medical past. The Norfolk County Medical Society is 100 years old, and, by American standards, this now places Norfolk in one of the more ancient medical categories.

Nineteen hundred and seventy appears to be a good vintage year for historical celebrations in Virginia. The Richmond Academy of Medicine and The Medical Society of Virginia are planning a joint Sesquicentennial exhibit during the annual state meeting this fall. The oldest state organization in this country—the Massachusetts Medical Society—was organized in 1781. This society is currently running a series of articles in the *Massachusetts Physician* dealing with the histories of the older state societies. Surprisingly The Medical Society of Virginia was invited to be the first included in this series. This article appeared early last year.

The current issue of the *Virginia Medical Monthly* is unusual in the happy blending of the old and the new. One only has to read Dr. Grinnan's history of medicine in Norfolk to realize how far the profession has come in the past century. When we compare this review with the excellent scientific articles from Norfolk, compiled by Dr. Charles Horton, we cannot help but wonder just what new discoveries have been left to appear during the next 100 years.

Certainly there is one badly needed medical facility we all hope will not have to wait for many more years—the establishment of a third medical school in Virginia. And there is no question as to where this school should be located, for this, and the two earlier special issues dealing with the excellent medicine practiced in Norfolk, has proven beyond peradventure that this new school should be in that city. The Virginia Medical Monthly congratulates the Norfolk County Medical Society for its accomplishments during the first century and trusts that the second century will be equally productive.

H. J. W.

News . . . .

Calendar of Events

Medical Aspects of Sports Conference—Sponsored by The Medical Society of Virginia and Virginia High School League—University Hall, Charlottesville —Saturday evening, July 25, and Sunday, July 26, 1970.

Flying Physicians Association—Annual Meeting—Bay Shore Inn—Vancouver, British Columbia—August 23-28, 1970.

Southwestern Virginia Medical Society—Fall Meeting—Red Carpet Inn—Pulaski—August 27, 1970.

American Electroencephalographic Society—Continuation Educational Course on "Current Practice of Clinical Electroencephalography"—Washington, D. C.—September 14-16, 1970.

Virginia Nursing Home Association—Annual Meeting—Hotel John Marshall—Richmond—September 15-17, 1970.

Legal Conference For Medical Society Representatives and Counsel——Sponsored by American Medical Association—Ambassador West Hotel—Chicago—September 18, 1970.

National Congress on Medical Ethics—Sponsored by Judicial Council of American Medical Association—Ambassador West Hotel—Chicago—September 19-20, 1970.

The Medical Society of Virginia—Annual Meeting—Hotel John Marshall—Richmond—October 11-14, 1970.

Symposium on Emergency Room Procedure—Sponsored by St. Mary's Hospital—Richmond—Afternoon of October 14 through October 15, 1970.

American Cancer Society, Virginia Division—Annual Meeting—Hotel Jefferson—Richmond—October 21-22, 1970.

Congress of County Medical Societies—Annual Meeting and Seminar on Private Practice—Netherland Hilton Hotel—Cincinnati, Ohio—November 6-8, 1970.

Virginia Hospital Association—Annual Meeting—The Homestead—Hot Springs —November 12-13, 1970.

American Heart Association—Scientific Sessions—Convention Hall—Atlantic City, New Jersey—November 12-15, 1970.

Pediatric Postgraduate Course—Problems in the Newborn Infant—University of Virginia School of Medicine—Charlottesville—November 13-14, 1970.

Southern Medical Association—Annual Meeting—Dallas, Texas—November 16-19, 1970.

Roanoke Memorial Hospital Postgraduate Program—Roanoke—March 18-19, 1971.

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Special Announcement

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following members were received into The Medical Society of Virginia during the month of May:

Louis Bryan, M.D., Annandale
Ruben D. Cabrera, M.D., Fairfax
John Columbus Cate, IV, M.D., Charlottesville
Attila Sakir Cigtay, M.D., Falls Church
Ralph J. Cole, M.D., Arlington
Gerhard K. Cotts, M.D., Arlington
Maurice Lee Courtney, M.D., Richmond
John Quincy Durfey, M.D., Richmond
Sigsby Warren Gayle, M.D., Richmond
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Herbert G. Ruffin, M.D., Richmond
Frank C. Sheldon, M.D., Danville
Gilbert Silverman, M.D., Richmond
William Logan Threlkeld, M.D., Newport News
John Hill Trant, III, M.D., Virginia Beach

Dr. Robertson Honored.

Dr. Alexander F. Robertson, Jr., who has practiced medicine in Staunton for fifty years has been honored by the medical staff of King's Daughters' Hospital for his long and continuous service. The occasion was a testimonial dinner at the Country Club of Staunton. Dr. Charles Caravati, Richmond, was speaker and he reviewed medical progress during the past 50 years. Dr. Robertson was presented a gold-headed cane, the symbol of excellence in the practice of medicine.

Dr. Robertson is a past president of The Medical Society of Virginia.

Virginia Academy of General Practice.

Dr. Clarence Taylor, Shawsville, was installed as president of the Academy at its annual meeting in Roanoke, May 14-16. He succeeds Dr. A. Epes Harris, Jr., Blackstone. Dr. Thomas H. Jennings, Bedford, was named president-elect.

Augusta County Medical Society.

Dr. Paul A. Woods was elected president of this Society at its annual meeting in May. Dr. Thomas L. Gorsuch is secretary. Both officers are from Waynesboro.

University of Virginia Faculty Members Retire.

Dr. Edwin W. Burton, professor of ophthalmology, will retire after forty years of service, with the last thirty-one as a full professor. He will continue private practice in Charlottesville.

Dr. E. Cato Drash, professor of thoracic surgery, has retired after thirty-nine years on the medical faculty, with the last twenty-four as a full professor. He will make his home at North Garden where he plans to become a full-time herb grower.

Dr. C. Bruce Morton, II, professor of surgery, retired after forty-three years on the medical faculty, the last thirty-four as a full professor. He plans to face "the future with interest and curiosity and with plans for painting, writing, fishing, and traveling, for which there may seem to be hardly enough time to accomplish."

Brown-Sequard Chapter Members.

Seventeen students and three faculty members of the Medical College of Virginia have been tapped for membership in the Brown-Sequard Chapter of Alpha Omega Alpha, honorary medical society. Faculty members are Drs. Charles M. Caravati, Fairfield Goodale, and Robert B. Scott.

The Virginia Medical Information System (VAMIS),

A State-wide biomedical library service funded by the Virginia Regional Medical Program is preparing to begin operation. The System will organize a network for interchange of biomedical information among medical centers, community hospitals, and

practicing health professionals in the State. This is a cooperative joint effort on the part of the libraries of the Medical College of Virginia and the University of Virginia. These two institutions will pool resources and provide information services to the entire medical community of Virginia with a view to improving the access of practitioners to timely scientific information.

Requests for materials may be made by letter, telephone, or through the Teletype Exchange Service (TWX). The Centers may be reached by telephone through the long distance channels or the State-Controlled Administrative Telephone System (SCATS).

Any information concerning the activities and services of the Virginia Medical Information System may be obtained from:

Mr. Richard Miller, Acting Director, Tompkins-McCaw Library, Health Sciences Center, P. O. Box 667, Richmond—(703) 770-4257; SCATS: 369-4257; TWX: 710/956-0255.

Dr. Wilhelm Moll, Director, Medical Library, School of Medicine, University of Virginia, Charlottesville—(703) 924-5063; SCATS: 252/2279; TWX: 510/587-5459.

Richmond Area Tuberculosis Association.

Among those recently named to the Executive Committee of this Association are Drs. Edwin S. Wysor, George E. Ewart and Edward S. Ray.

Emergency Room Physician.

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Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery

Side Effects include drowsiness, usually transient, if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate Previous history of allergy may or may not be related to incidence of reactions Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration

Meprobamate may sometimes precipitate grand mal attacks in patients susceptible to both grand and petit mal. Extremely large doses can produce rhythmic fast activity in the cortical pattern. Impairment of accommodation and visual acuity has been reported rarely After excessive dosage for weeks or months, withdraw gradually (1 or 2 weeks) to avoid recurrence of pretreatment symptoms (insomnia, severe anxiety, anorexia). Abrupt discontinuance of excessive doses has sometimes resulted in vomiting, ataxia, tremors, muscle twitching and epileptiform seizures Prescribe very cautiously and in small amounts for patients with suicidal tendencies Suicidal attempts have resulted in coma, shock, vasomotor and respiratory collapse and anuria. Excessive doses have resulted in prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and occasionally hyperventilation. Treat with immediate gastric lavage and appropriate symptomatic therapy (CNS stimulants and pressor amines as indicated). Doses above 2400 mg /day are not recommended.

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Obituary . . . .

Dr. Edward Sidney Carr,

Narrows, died May 7, having been in ill health for some time. He was eighty-five years of age and graduated from the former University College of Medicine, Richmond, in 1911. Dr. Carr had practiced in Narrows for fifty-seven years before his retirement last year. He had been a member of The Medical Society of Virginia since 1915.

His wife and a daughter survive him.

Dr. Campbell Harris, Sr.,

Formerly of Richmond, died in a Wilson, North Carolina, hospital on June 4. He was seventy-four years of age and a graduate of the Medical College of Virginia in 1917. Dr. Harris practiced for thirty-seven years in Richmond but since his retirement had made his home in Ft. Lauderdale, Florida. He had been a member of The Medical Society of Virginia for fifty years.

His wife, a daughter and a son, Dr. Campbell Harris, Jr., survive him.

Dr. Cuthbert Tunstall,

Fredericksburg, died May 3 at the age of seventy-seven. He attended medical school at the University of Virginia but left to become a fighter pilot in World War I. Dr. Tunstall then returned to the University and received his medical degree in 1921. He was an assistant professor at the University before opening his practice in Fredericksburg thirteen years ago. Dr. Tunstall was a member of The Medical Society of Virginia.

Two daughters survive him.

Dr. Clement E. Schotland,

Norfolk, died May 30, at the age of sixty. He had lived in Norfolk only a year and suffered a stroke soon after moving there. Dr. Schotland received his medical degree from the College of Physicians and Surgeons of Columbia University in 1935 and practiced in Irvington, New Jersey, for thirty-four years. He was a member of The Medical Society of Virginia.

A daughter survives him.

Dr. Lingamfelter.

On April 17, 1915, Carl Scott Lingamfelter was born in Norfolk, Virginia. Because his father was a lumber merchant, Carl and his family lived in Richmond, Franklin, and Culpeper. Carl entered the University of Richmond in 1930 at age fifteen. He was elected a member of the Phoenix Club, an honorary scientific society. In 1934, he graduated from the University of Richmond and entered the Medical College of Virginia. He was elected president of Phi Rho Sigma medical fraternity and joined Alpha Sigma Chi, the national leadership fraternity. He graduated from the Medical College in 1938, served his internship at Johnston-Willis Hospital, and began general practice in the Lakeside area of Richmond.

Carl, as well as being a rare story-teller, was a great organizer. He helped found the Richmond Academy of General Practice and the Virginia Society of General Practice. He was beloved by both patients and other physicians. After ten years of general practice, he started his study of dermatology and syphilogy at Columbia Presbyterian Medical Center in New York. While there he was a preceptee in the office of Dr. James Benson Cannon, Professor of Dermatology. Carl served as a resident physician in dermatology at the University of Virginia Hospital under Dr. Edward P. Cawley until 1952, when he returned to Richmond and entered private practice. He became an associate clinical professor of dermatology at the Medical College of Virginia and a diplomat of the American Board of Dermatology. Later he served as a lecturer in dermatology at the University of Virginia. He was a fellow of the American Academy of Dermatology and the Society of Investigative Dermatology. He was a member of The Medical Society of Virginia, the American Medical Association, the Washington Dermatological Society, the Richmond-Tidewater Dermatological Society, and the Virginia Dermatological Society. In 1969, he served as president of the Virginia Dermatological Society.

Carl was one of the warmest and most considerate

friends, and a delightful companion. He was at his best entertaining his friends with wit and humor. His ability to tell a good story was rare. Carl's interests were varied. He enjoyed occasional golf at the Country Club of Virginia, weekends on his boat, football games and many social occasions.

With all Carl's fun and gaiety, he had a serious and deeply religious side. He learned the importance of the Church from his paternal grandfather who was a Presbyterian minister. He was a member of St. Mark's Episcopal Church and served on the vestry and as a lay reader. Carl faced death as he did life, in a courageous manner. His minister, the Rev. Boyd R. Howarth, D. D., stated at the time of his death, February 15, 1970, "In all my years in the ministry I've known very few men who were better prepared to die than Carl. Being a physician he knew what his condition was and talked with me about his approaching death. He even reminded me that I had said on one occasion that death is one of God's most valuable gifts."

Carl Lingamfelter was a devoted husband, father, and a true friend. He was a dedicated, capable physician and a Christian gentleman. He will be greatly missed.

THEREFORE, BE IT RESOLVED THAT the Richmond Academy of Medicine and the medical profession has lost an honored and beloved member, and that this Academy records with deep sorrow his untimely passing. Also, that a copy of this resolution be kept on file in the Academy and a copy be sent to his wife and family.

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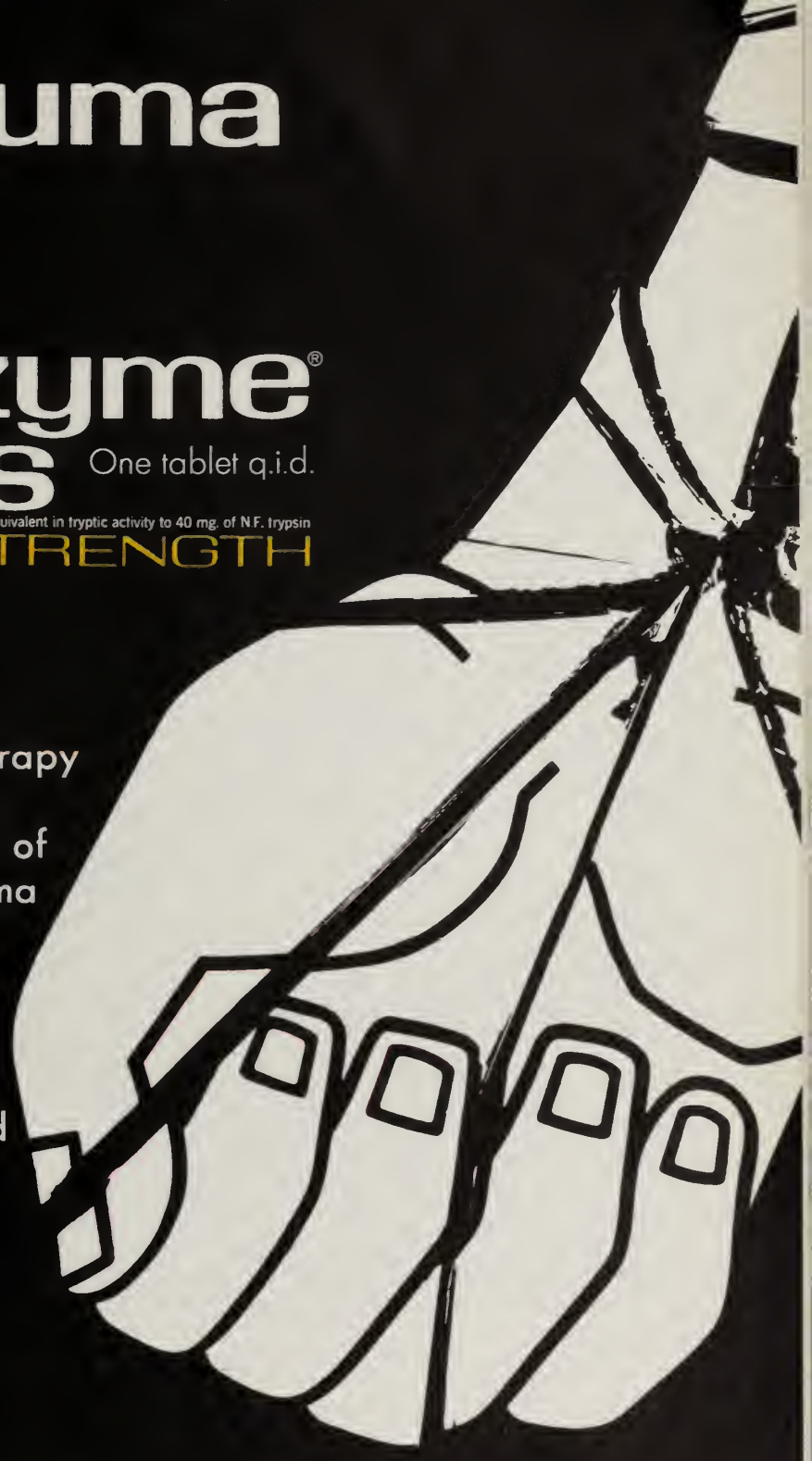
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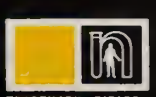
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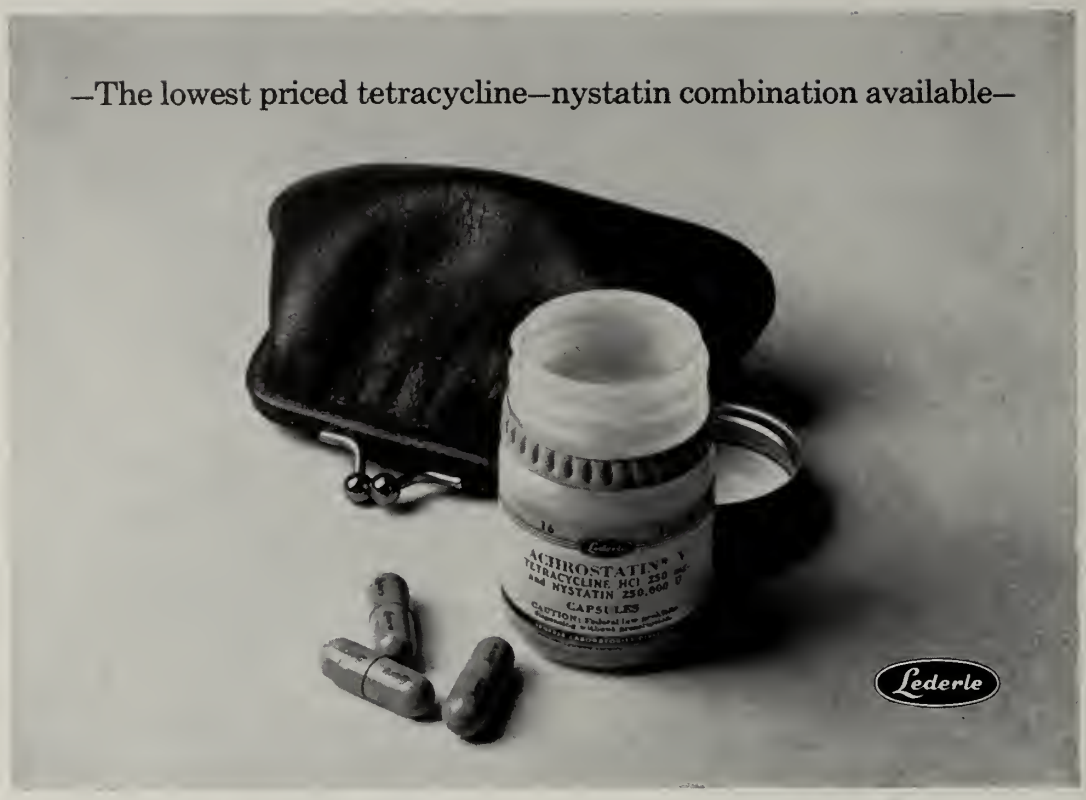
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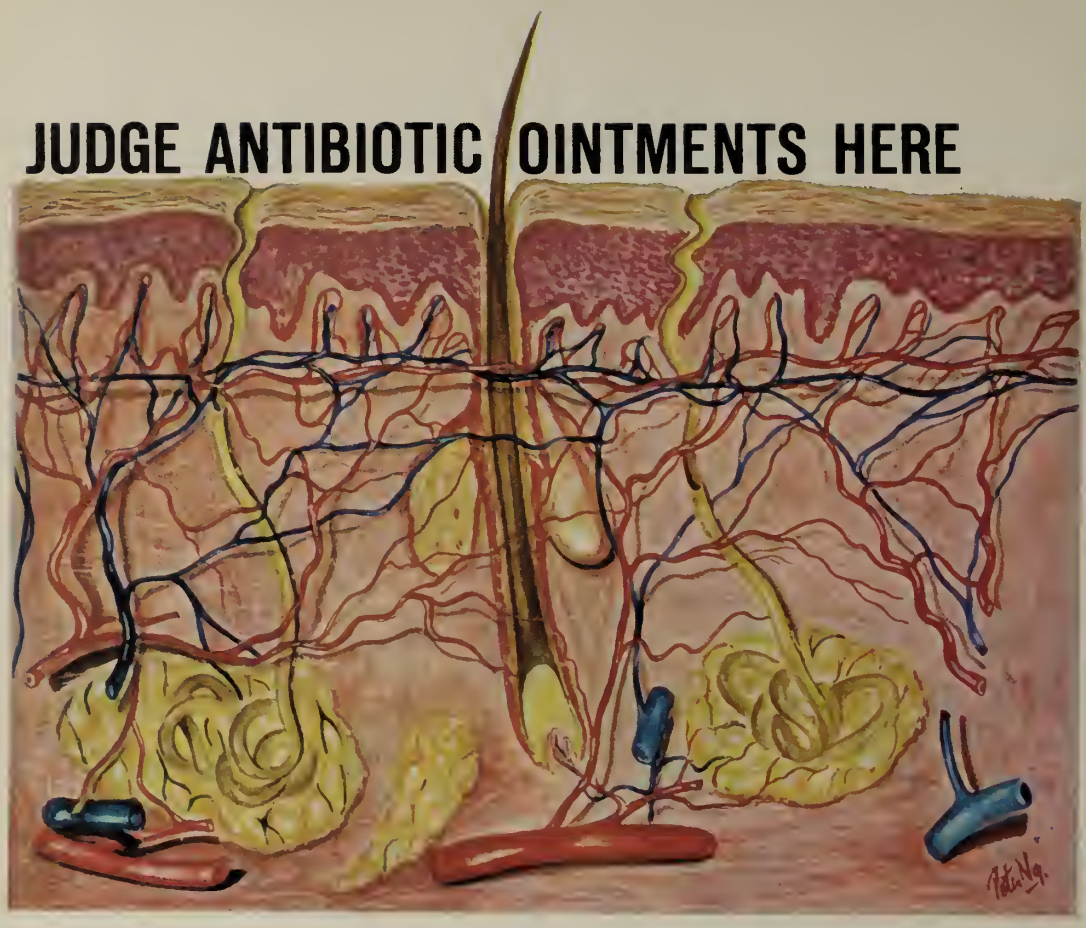
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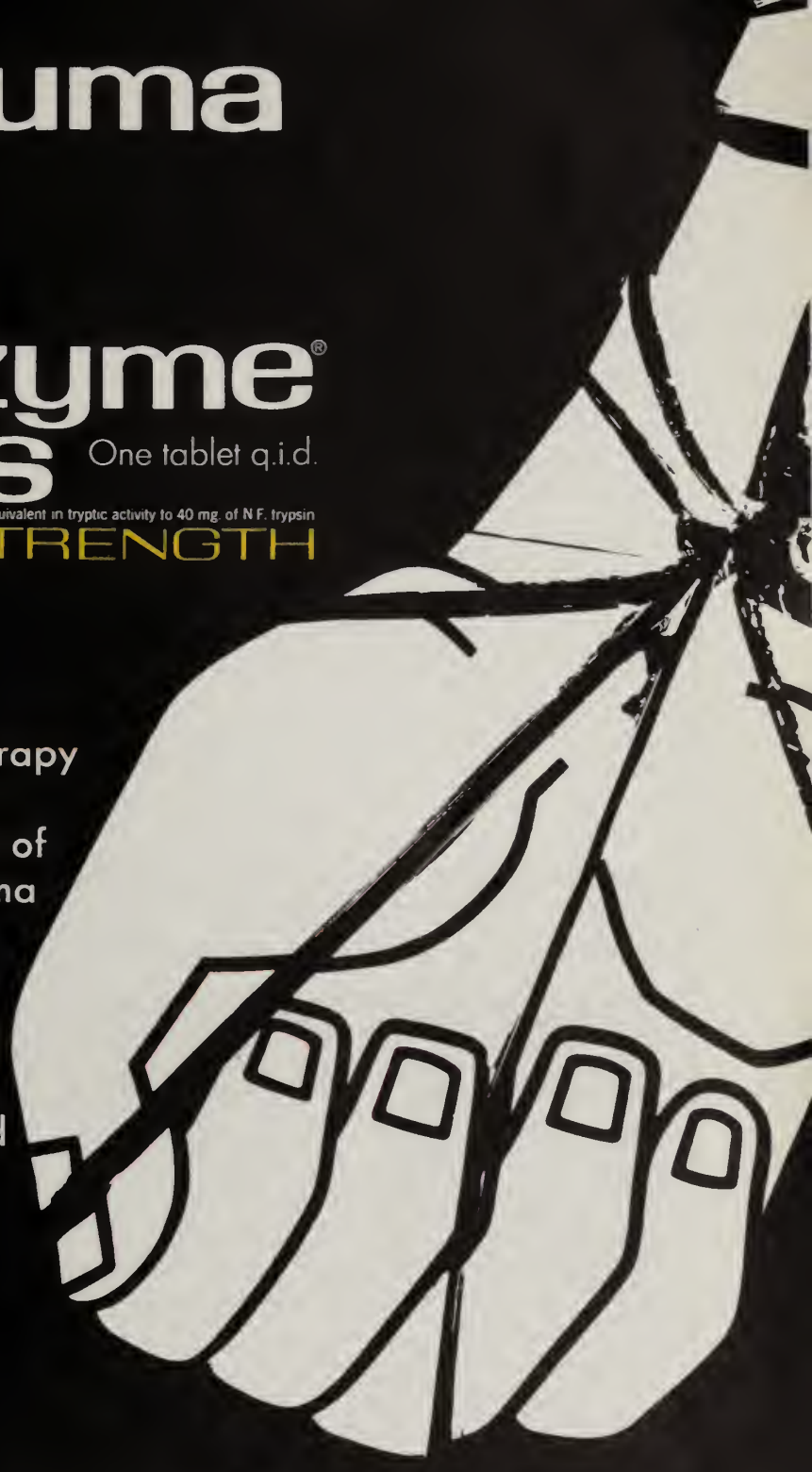
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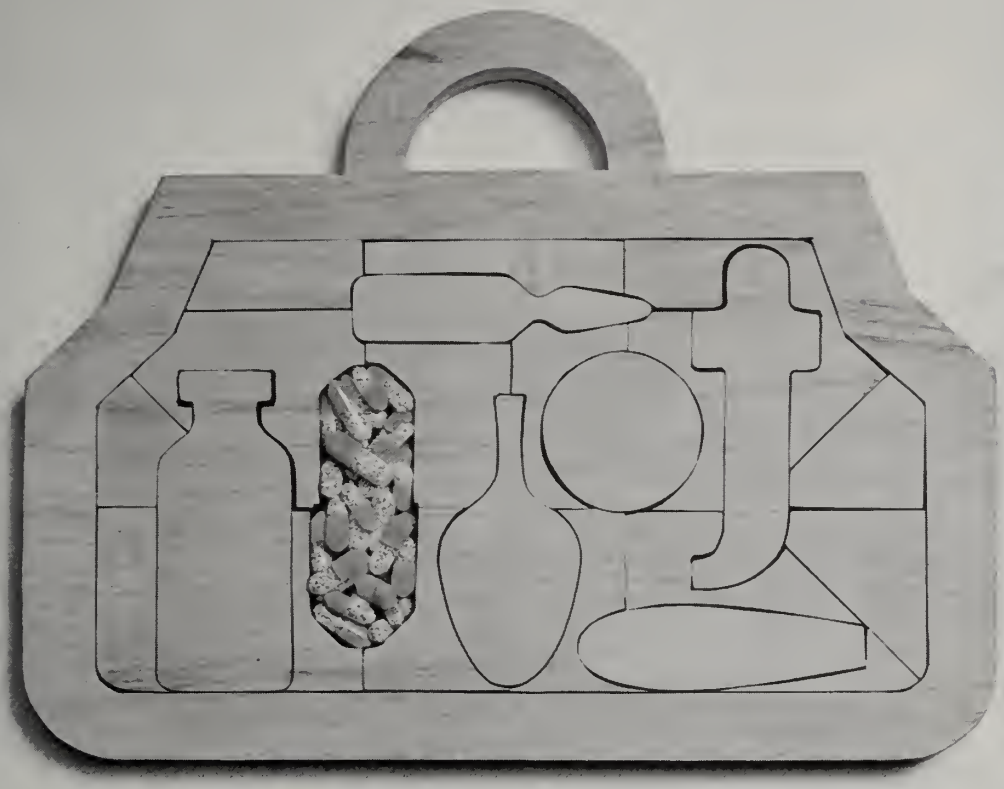
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The Virginia
MEDICAL MONTHLY

August, 1970
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Guest Editorial . . . .

An Evaluation Program for Prospective Applicants to Medical School

TWENTY-NINE carefully selected students from sixteen colleges are spending eight weeks at the University of Virginia School of Medicine in an intensive study of the cardiovascular system. These students are participants in an experimental program designed to evaluate prospective candidates for the study of medicine.

The primary objective of this undertaking is to identify individuals with the motivation and the potential ability to perform successfully in medical studies but who, on the basis of current selection practices, appear unlikely to gain acceptance to a medical school.

There are medical educators who believe that some of the criteria now used to evaluate applicants for medical school are biased; that is, they are based in part on measurements that are useful as predictors of performance chiefly when applied to middle class students with culturally advantaged backgrounds. Specifically, the Medical College Admission Test has been the object of this criticism. Thus, these educators reason, it is possible that the continued use of such measurements in evaluating applicants from disadvantaged backgrounds may keep potentially capable persons out of the medical profession, to their detriment and to that of the profession. If this be true, alternative or supplementary admission practices are needed, particularly for evaluation of individuals from the disadvantaged minority groups.

Recently, at Emory University, it was shown that students who were unacceptable to law school under customary admission procedures nevertheless achieved effectively when they were selected on the basis of performance in a single law course. A similar program was conducted at the University of Virginia School of Law in the summer of 1969.

The evaluation program now in progress at the University of Virginia School of Medicine is experimental in concept and is based on the assumption that performance in a carefully designed and rigorously conducted professional course is likely to be an accurate index of a student's capability for the study of medicine. The eight-week course of study being offered deals with important aspects of the cardiovascular system in both health and disease. Instruction in anatomy, physiology, biochemistry, pathology, pharmacology, diagnosis and treatment is presented in lectures, seminars, laboratory exercises and clinical sessions by members of the medical school faculty, who are serving on a voluntary basis. An attractive feature is the employment of medical students as tutors.

Experienced medical students are uniquely qualified to help the enrollees approach the anticipated difficulties of this program. In addition, the social contacts that will grow from the tutor-tutee relationship may provide some balance to the enrollee's life and prepare the way for his entry into the medical student community should he be admitted to a medical school.

Each enrollee must have completed at least three years of undergraduate college work, including courses in biology and chemistry. Of necessity the number of students is limited, but admission has not been restrictive insofar as race or sex is concerned. Preference, however, has been given to those whose home is in the State of Virginia or in the southern Appalachian region. Notices of the program have been widely distributed and many disadvantaged minority group students have been attracted to it.

There is no charge for tuition. Grants from the Office of Economic Opportunity, through the Association of American Medical Colleges, from the Josiah Macy, Jr., Foundation and contributions from others make it possible to offer some of the enrollees in this program assistance consisting of reimbursement for living expenses and an allowance in lieu of summer earnings. Those not qualifying for financial assistance from these sources are responsible for their own expenses.

This program is not intended to compensate for previous deficits in preparation for medical studies, nor is it designed for its intrinsic educational value, important as that may be. Academic credit, in the usual sense, will not be given for the summer's work. Moreover, even the satisfactory completion of this course does not assure admission to the University of Virginia School of Medicine. It is intended, however, that performance in the program be used by the student in support of an application to any medical school.

The primary goal of this undertaking has been stated. A secondary, yet important objective, is to develop insight regarding other methods of selection which can be used to supplement existing admission practices. Although dependable guidelines are now available, there is no immutable standard for judging the potential of a person for success in medical studies. It is by a variety of means that an admissions committee seeks and collates information concerning the applicant's moral and social responsibility, his intellect and motivation, and his capacity for growth.

If the assumptions on which this program is based are valid, it will be a tool for bringing disadvantaged minority group students, of any race, into medical school without awaiting the results of long-term changes in social and educational background. It is not anticipated that this program will result in the production of mediocre physicians. Rather, its aim is to identify, in a unique and as yet untried manner, those who can become highly capable physicians by offering them the opportunity to demonstrate their potential ability for handling the work of medical school.

William R. Sandusky, M.D.

Dr. Sandusky is Chairman, Admission Committee, University of Virginia School of Medicine.

Cardiology in My Time, 1911-1970

PAUL DUDLEY WHITE, M.D.
Boston, Massachusetts

I. *1911-1920 B. C. (Before Cardiology).*

A. Herrick—Coronary Thrombosis—1912
B. Cabot—Causes of Heart Disease—1914
C. My training in Pediatrics and Internal Medicine—1911-1913
D. Physiological Congress, Gröningen, Holland, 1913
E. Lewis and Mackenzie, London—1913-1914
F. Electrocardiography in Boston began in 1914
G. First World War—B.E.F. 1916 Back of the Somme
—A.E.F. 1917-1919 Bordeaux
H. Red Cross—Macedonia—Typhus, 1919
I. Soldier's Heart — Neurocirculatory asthenia

II. *1921-1930 Cardiology as a Specialty Begins.*

A. The classification of Cardiac Diagnosis:
a. Etiological. b. Structural. c. Functional
Wykoff and White
B. Association for the *Prevention** and Relief of Heart Disease: New York, New England, Philadelphia, Chicago, St. Louis
C. The American Heart Association incorporated in 1924
D. The beginning of the recognition of Coronary Thrombosis and of its increase
E. Electrocardiography comes to stay
F. The heart in industry—1921
G. Early attempts at cardiac surgery: Cutler, 1923, Sonttar 1925, Churchill 1928

III. *1931-1940 The Decade of New Cardiovascular Diagnoses.*

A. Congenital anomalies—atrial septal defects, aortic coarctation, patency of ductus arteriosus cured
B. Dissecting aneurysm of the aorta
C. The acute cor pulmonale
D. Pulmonary embolism—a common disease in medical patients
E. Wolff-Parkinson-White Syndrome widely noted
F. Cardiac rehabilitation and optimism in the treatment of heart disease
G. The range of the normal heart—a source of error

IV. *1941-1950 The Decade of Therapeutic Triumphs and the Second World War.*

A. The discovery and introduction of penicillin for the cure of SBE and syphilis and for the prevention of rheumatic fever. Low sodium intake for congestion and high blood pressure.
B. Cardiovascular surgery begins in earnest for congenital and acquired defects—Leriche, Harken, Bailey, Blalock, Crafoord, Gross
C. Reversibility of heart disease—hypertension relieved by thoracolumbar sympathectomy (Smithwick)
D. The beginning of major support of C-V research

White, Paul Dudley, M.D., *Clinical Professor of Medicine, Emeritus, Harvard Medical School, Boston.*

Abstract of paper delivered September 9, 1969, before Richmond Academy of Medicine.

*Italics mine.

a. The National Heart Institute and National Advisory Heart Council
b. The A.H.A. begins its annual drives

E. International Cardiology begins 1944-1950. The first world Conference of Cardiology, Paris, 1950.

V. *1951-1960 Cardiology in Midcentury.*

A. *Cardiovascular Research in Full Bloom,* including cardiac catheterization and angiocardiography and new diuretics
B. Cardiovascular disease first in mortality in the USA
C. Recognition of need to concentrate on preventive cardiology
D. Coronary heart disease in young adults—Inheritance of genes versus inheritance of environment. Risk factors.
E. International Population C-V epidemiological research. The artificial pacemaker.
F. International cardiology in operation—the first Soviet participation in Washington at Second World Congress in 1954
G. The development of the pump for C-V surgery—Gibbon
H. The International Cardiology Foundation (now Federation) incorporated to bring together cardiologists, laymen and governments all over the world.

VI. *1961-1970 The Grave Epidemic of Atherosclerosis Must Be Contained.*

A. Infectious heart diseases largely controlled
B. Hypertension yielding to drug therapy
C. Major researches the world over into the causes of the American Epidemic of Atherosclerosis—heart attacks, strokes, and sudden deaths
D. The Long Follow-Up
E. The Patient versus his Disease
F. Open heart surgery and intensive coronary care units. Cardiac transplants and artificial pumping assists
G. The Sixth World Congress of Cardiology in London, 1970

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Changing Concepts in Ischemic Heart Disease

BARRY M. WELBORNE, M.D.
LOCKHART B. McGUIRE, M.D.
Charlottesville, Virginia

Coronary arteriography is now done with sufficient frequency to influence our concepts of ischemic heart disease.

INFORMATION GATHERED in recent years from the increasing application of coronary arteriography may require major revision of our concepts of ischemic heart disease. Principal assumptions about this area of disease in the past have been (1) that chest pain of the typical, anginal description, often accompanied by electrocardiographic changes, represents myocardial ischemia; and (2) that myocardial ischemia is due to coronary arteriosclerosis unless there is associated by evidence of aortic valve disease hypertension, or other familiar causes of an imbalance between myocardial oxygen requirements and blood flow. The basis for the latter assumption has been pathologic reports of a high degree of association between the clinical history of angina and extensive coronary arteriosclerosis at autopsy.[1,2]

More recently as a result of coronary arteriography during life, however, there have been individuals found to have not only chest pain but also EKG evidence of myocardial ischemia with normal coronary arteriograms, and without aortic stenosis, hypertension, etc. This report will briefly summarize some of the current lines of study in progress in an effort to explain this discrepancy.

At the University of Virginia of the first 39 patients with a perfectly typical history of angina pectoris undergoing arteriography, five did not have stenosing lesions. In an additional 32 patients whose chest pain had both non-anginal as well as some anginal features, a majority had normally patent vessels while others had stenoses. Three possible interpretations of this would be: (a) the arteriographic technic was inadequate, especially to visualize significant small-vessel narrowing; or (b) the patients with normal arteriograms did not have myocardial ischemia, but had some non-cardiac cause of chest pain; or finally, (c) these patients have some form of myocardial ischemia which is not on an arteriosclerotic basis.

It is probable that all of these explanations are appropriate in different instances, but the first is unlikely in any center where trained individuals are obtaining high-quality radiographs by either the ciné or biplane, serial film technique. Comparisons of coronary arteriograms with autopsy findings[3,4] have generally confirmed the accuracy of arteriograms. Narrowing or obstruction of vessels down to less than 1 mm. diameter can be recognized. On the other hand, More and Somers[5] did find histologic evidence of increased wall thickness and decreased numbers of very small coronary branches (80 μ) in hearts of anginal patients, as compared to non-anginal controls. With this possible exception, arteriography can generally be relied upon to reveal significant coronary narrowings when they are present. For instance, coronary collateral circulation,

From the Department of Internal Medicine, University of Virginia School of Medicine.

Supported in part by U.S.P.H.S. Clinical Cardiology Training Grant #HE 05751.

which results from ischemia, has been seen only in the presence of obstructing lesions of the major arterial branches.

What about the possibility that these patients never really had myocardial ischemia, and that their chest pain or EKG changes were misinterpreted by the examining physicians as being characteristic of angina? Chest discomfort, either from pectoral muscle fatigue or other mechanisms, is a familiar symptom in anxious individuals, who often may have a psychological reason for concern about coronary disease, and who may know the description of angina. From a practical standpoint coronary arteriography may be most useful in this group of patients. They have often been admitted several times to local hospitals and given intensive care for a disease which they do not have. Demonstration of normal vessels in such patients may help the physician to reassure them about their threat of myocardial infarction, and to redirect therapy along more appropriate lines. In some of these individuals more careful evaluation may reveal evidence of old pericarditis or chest injury as non-ischemic causes of pain. Nevertheless, especially if the electrocardiogram is abnormal, these patients may be difficult to distinguish from the third possibility—that is, true myocardial ischemia on some non-atherosclerotic basis.

At the University of Virginia we have been impressed on at least three occasions with congenital variations in coronary anatomy in patients who had chest pain but without focal narrowing or obstruction on arteriogram. In one such patient, who had anginal pain and ischemic changes in a post-exercise EKG, the entire right coronary artery arose as a branch of the left main coronary artery and was of relatively small caliber. In general, however, support for the concept of non-arteriosclerotic myocardial ischemia has depended upon biochemical rather than morphologic evidence.

In 1967 Likoff and co-workers described a group of women between the ages of 30 and 53 who had anginal pain, abnormal electrocardiograms, and normal coronary arteriograms.[6] Cardiac function in these patients was assessed by standard pressure and flow measurements at cardiac catheterization and was normal. These authors rejected the possibility of coronary vasospasm, noting that vasoconstriction and dilatation are commonly seen at arteriography in all categories of patients without apparent clinical significance. They could not exclude a barrier to oxygen transport at either the microvascular or cellular level. Stability in the course of these individuals over 2-3 years after study without progression to myocardial infarction or other fatal complication was noted. Biochemical proof of myocardial anoxia in these patients, however, was not provided.

In 1966 Proudfit, Shirey, and Sones[7] reported that only 13 out of 207 anginal patients failed to show significant obstructing lesions at arteriography, and they considered in retrospect that some of these were explainable by hypertension. Nevertheless, all of these 13 patients could not be explained, and no metabolic information was available.

At approximately the same time Gorlin's laboratory[8] reported that in patients with arteriographically proven, significant coronary stenoses anaerobic myocardial metabolism could be demonstrated by evidence of relatively increased lactate concentrations in samples of blood from the coronary sinus. Parker and his colleagues, using atrial pacing instead of exercise as a stress in a group of subjects also known to have both angina and significant, anatomical stenoses, were able to confirm the development of excess lactate production in most of such subjects, as well as to record hemodynamic evidence of left ventricular dysfunction in them.[9] Subsequently Gorlin's group has reported that 9% of all patients seen with the "anginal syndrome" had normal coronary arteriograms, and similar metabolic studies were done in 50 such subjects.[10] In one-

third of these individuals objective evidence of myocardial ischemia from coronary sinus lactate samples during exercise or isoproterenol infusion was found despite normal arteriograms. These authors suggested that microcirculatory disease was present, and that psychoneurosis was not responsible for their symptoms. These patients did not have diabetes or serum lipid abnormalities. No comment as to their prognosis was offered, and no histologic confirmation of the postulated microcirculatory disease was provided.

Meanwhile, Eliot has suggested that myocardial anoxia does exist in some of these anginal, anatomically normal individuals on the basis of an abnormal affinity between hemoglobin and oxygen, so that oxygen is not adequately released to be available for myocardial consumption.[11] This abnormality has been found primarily in cigarette-smoking, premenopausal women, similar to those described by Likoff. Both anginal pain and electrocardiographic signs of "ischemia" were present. The abnormality in binding of oxygen and hemoglobin, which was demonstrated by means of measuring the partial pressure of oxygen required to produce various degrees of saturation of hemoglobin samples, could be elicited by having control subjects smoke cigarettes, and was reversible with discontinuance of smoking. This postulated mechanism for myocardial anoxia has been rejected by other students of the problem, such as Gorlin, who has found total myocardial oxygen consumption to be normal in such anginal patients, despite evidence of focal, anerobic metabolism from coronary sinus lactate samples.[10] In any case, three of Eliot's subjects died, and one showed subendocardial myocardial infarction without corresponding atherosclerotic occlusion of the coronary arteries. Dwyer *et al.* described 10 patients with angina and normal coronary arteriograms, eight of whom smoked cigarettes, and in eight of whom EKG abnormalities were present either at rest or after exercise.[12] On the basis of elevation of left ventricular diastolic pressure during exercise similar to that seen in a similar, arteriosclerotic group, these patients were felt to have objectively abnormal myocardial function. One of these patients died suddenly later, and at autopsy had normal coronary arteries.

From these reports it is evident that the possibility does exist of myocardial ischemia at the cellular level either due to isolated, microvascular disease or to some physicochemical cause. As an explanation of chest pain and normal coronary arteriograms, however, this appears to be relatively infrequent. Another element in the adequacy of myocardial blood supply in addition to the level of cardiac work and the degree of atherosclerosis may be variation in congenital development of the coronary arteries. Although occasional fatalities may occur in anginal patients with normal coronary arteriograms for unknown reasons, the infrequency of this occurrence in large series of coronary artery studies to date provides a significant basis for real reassurance to the patient who has anatomically normal coronary arteries.

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The Role of Pericardiectomy

JOSEPH M. DEIGNAN, M.D.
Richmond, Virginia

Pericardiectomy has been a dramatic procedure in the treatment of heart disease because it "cured" when successful and because it was the first surgical procedure for the treatment of heart disease. Twenty-six patients are analyzed. The indications for and the technique of the operation are discussed.

THE GOAL of this paper is to present the experience at the Medical College of Virginia and McGuire Veterans Administration Hospital with pericardiectomy. Then a brief review of the literature tracing the evolution of this operation and finally a more detailed discussion on the current indications for pericardiectomy will be presented.

Clinical Experience

From 1951 through 1968 twenty-six pericardiectomies were performed at MCV and McGuire V. A. Hospital. These cases are summarized in Table I. Twenty-one of these patients were men and only five were women; this disproportion of men is apparent throughout the literature and lacks explanation. There was a predominance of Negro patients; and of the nine patients with tuberculous pericarditis, six (sixty-seven per cent) were Negro. It is most impressive that in this series nine patients (thirty-five per cent) had tuberculosis as the etiology of their pericarditis. Even in the most recent years tuberculosis remains as an important etiology. Undoubtedly this is related to the poor socio-economic status of many of our patients.

Chronic constrictive pericarditis was the indication for surgery in twenty-three (ninety per cent) of the patients in this series. If one considers hepatomegaly, ascites, and peripheral edema as evidence of prolonged venous hypertension, all of these patients had advanced disease.

Patient No. 15 presented with cardiac tamponade following a stab wound of the heart; initially this was nicely managed with pericardiocentesis but within two weeks he had sustained venous hypertension with hepatomegaly and a paradoxical pulse. Both patient No. 11, a nine year old girl with chronic pericardial effusion, and patient No. 25, a forty-one year old man with recurrent pericarditis, had equivocal evidence of venous hypertension but they were both bedridden invalids because of their pericarditis before surgery.

The most common complaints of these patients were shortness of breath, weakness, increasing abdominal girth, and chest pain. The duration of symptoms varied from a few days up to eight years. Most patients dated the onset of their illness to two or three months prior to admission.

On physical examination almost all patients had systolic blood pressures less than 120 mm. Hg, with pulse pressures usually

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of 20-30 mm. Hg; they were frequently dyspneic and about one third were febrile. Neck vein distension, paradoxical pulse, hepatomegaly, ascites, peripheral edema, pulmonary rales and effusion, absence of palpable cardiac impulses, and distant heart sounds were the common physical findings.

The most consistent laboratory derangements were anemia and abnormal liver function tests. The electrocardiogram changes of low voltage or ST-T wave inversions characteristic of pericarditis were present in ninety per cent of the patients. Roentgenograms of the chest usually demonstrated the large cardiac silhouettes of pericardial effusion or the small hearts of constriction, some with calcified pericardium. This latter finding was seen infrequently in this series.

When a pericardial effusion was diagnosed a pericardiocentesis was done. The fluid aspirated was cultured for bacteria, fungi, and acid fast bacilli. Then air was instilled for better contrast to evaluate heart size and thickness of the pericardium under fluoroscopy.

Eighteen of the patients had cardiac catheterization preoperatively; sixteen had pressure findings consistent with constrictive pericarditis. The classical findings are an elevated right atrial pressure with an "M" shaped contour and an elevated right ventricular end-diastolic pressure with a typical early diastolic dip not reaching zero.[18,31] In 1962 Fitzpatrick, Wyso, Bosher, and Richardson from this institution reported catheterization data on the first eleven patients in this series.[18]

Two patients had normal preoperative cardiac catheterizations. Patient No. 18 had tuberculous pericarditis, and following decortication of his heart his venous pressure dropped from 14 cm. of saline to 8 cm. and his hepatomegaly disappeared. Patient No. 25 had recurrent pericarditis without significant constriction.

PERICARDIECTOMY

M. C. V.—V. A. Experience With 26 Cases

	Date of Surgery	Patient	Pathology	Etiology	Concurrent Disease	Course
1.	12/51	MW-29NF	Constrict.	TB	Pul. TB, Ca cervix	Good
2.	5/53	JM-58WM	Constrict.	TB	None	Good
3.	6/56	LH-41WM	Constrict.	Non-spec.	Late Sarcoma Prostate	Good
4.	8/56	LJ-36NF	Constrict.	Non-spec.	None	Good
5.	9/56	JH-59WM	Constrict.	Non-spec.	Pul. Embolus	Post-op. Death
6.	10/56	EM-44WM	Constrict.	TB	Pul. TB, Alcoholism	Good
7.	4/57	HJ-4NM	Constrict.	Non-spec.	None	Good
8.	5/57	LS-63NM	Constrict.	Non-spec.	Pleuritis	Good
9.	7/57	LM-39WM	Constrict.	Non-spec.	None	Good
10.	3/58	JC-33NM	Constrict.	Non-spec.	Pleuritis, Staph. Inf.	Post-op. Death
11.	9/59	SW-9WF	Chr. effus.	Non-spec.	None	Good
12.	7/60	DB-59NM	Constrict.	TB	Hemolytic Disease	Good
13.	7/62	RM-19WM	Constrict.	Non-spec.	None	Good
14.	5/63	RT-37WM	Constrict.	Non-spec.	Rec. pericarditis	Death—2 yrs.
15.	10/63	AS-28NM	S. A. Effus.	Trauma	Rec. chest trauma	Good
16.	5/64	CM-51NM	Constrict.	TB	Pulmonary TB	Good
17.	3/65	SM-39NM	Constrict.	Non-spec.	Heart failure, pleuritis	Fair
18.	9/65	EH-36NM	Constrict.	TB	Pulmonary TB	Good
19.	8/66	CR-53NM	Constrict.	Non-spec.	Wound infect., encephalopathy	Good
20.	11/66	JS-70WM	Constrict.	TB	Silicosis, TB	Good
21.	5/67	VC-45WF	Constrict.	Non-spec.	None	Good
22.	3/68	KR-54NM	Constrict.	TB	Pulmonary TB	Good
23.	5/68	SR-19WM	Constrict.	Non-spec.	None	Good
24.	7/68	WB-59NM	Constrict.	TB	None	Good
25.	10/68	AM-41WM	Recurrent pericarditis	Non-spec.	None	Good
26.	12/68	CW-62NF	Constrict.	Non-spec.	Heart failure	Good

Before surgery these patients were all treated with digitalis, diuretics, antibiotics, and other supportive measures. Early in the series it was the practice to treat patients suspected of having tuberculous pericarditis with isoniazid (300 milligrams per day) and streptomycin (1 gram per day) or sometimes paraminosalicylic acid (12 grams per day) for six weeks before pericardiectomy. Now it is our practice to cover *all* patients coming to pericardiectomy with isoniazid and streptomycin preoperatively for a minimum of three days. In this time we reach therapeutic blood levels of these drugs; this helps prevent dissemination of the acid fast bacilli if tuberculous pericarditis is encountered at surgery. It is also important to give special attention to evaluating pulmonary function and to training the patient in using the respirators preoperatively.

Anesthesia management has been simplified by assuring that the electrocardiogram, central venous pressure, and arterial pressure can be constantly monitored throughout surgery. Usually a large intracath is inserted in an ulnar artery and then attached to Statham strain gauge and an oscilloscope recorder. Besides the usual armamentarium of pressor drugs, the anesthesiologists keep a lidocaine (Xylocaine) drip (1 milligram per milliliter) available for instantaneous use if arrhythmias become a problem. Of course all of these patients have endotracheal anesthesia, narcotics, nitrous oxide, and various relaxants are usually employed. Fluothane is not selected if the patient has abnormal liver function. Six to eight units of whole blood, including one or two units of fresh blood, are available to use during the case.

Operative Technique

The midline sternal splitting incision is usually selected; this gives good exposure to the right and left ventricles and cavae and it is easy to close. It is inadequate for exposing a large pericardial effusion.[25,26] Prior to 1962 most of the pericardiectomies in this series were done through a transternal incision; this incision is begun as an anterior thoracotomy in the left fifth intercostal space. When the diagnosis is confirmed, the left fifth costal cartilage is divided and the sternum cut transversely at the level of the fourth intercostal space; the incision into the right fourth interspace is then extended laterally as far as necessary. This incision gives wide exposure and is particularly suited for exposing the huge pericardial sacs of chronic effusion, the posterior aspect of the left heart, and it permits a parietal pleurectomy to be done if necessary.[7,29]

The pericardiectomy is begun over the left ventricle first by sharply excising all the parietal pericardium down to the phrenic nerves on each side; the left phrenic is then isolated on a two centimeter strip of adjacent pericardium and as much of the posterior pericardium as possible is excised. Careful dissection is also necessary to remove as much pericardium from the diaphragm as possible. Tedious dissection is often necessary to remove the peel on the visceral pericardium. The decortication is started over the left ventricle near the apex away from the coronary arteries. The peel is carefully incised until the myocardium is noted to bulge into the incision; this plane is then developed with blunt and sharp dissection beneath the epicardial peel. Excessive bleeding is encountered if the dissection develops deep to the epicardium and into the myocardium. In difficult decortications sharp dissection may be necessary to remove the peel in a piecemeal fashion. In long standing constriction the peel may be a single thick calcified layer. After freeing the entire left and right ventricles, care is taken to inspect the A-V groove for constriction and to lyse constrictions around the vena cavae. Although the atria have also been partially decorticated in many of these cases, it is done only if it is safe and easy or there is obvious constriction.

Decortication of the heart can take two

to three hours so it is important to take frequent rest periods when the heart is not manipulated to help avoid hypotension and arrhythmias. This technique has kept our intra-operative problems to a minimum. Inadvertent tears of the heart are repaired with 3-0 vascular Tevdek mattress sutures backed with teflon pledgets. On completion of the decortication the central venous pressure is checked to make certain the constriction has been relieved. The mediastinum and pleural cavities entered are drained with plastic intercostal tubes.

Early in the postoperative period special attention is devoted to keeping the patient well oxygenated and to avoiding congestive heart failure. Sometimes the endotracheal tube is left in place and the patient ventilated mechanically for a few hours in the recovery room.

Several patients have maintained elevated venous pressures for several weeks or months in spite of digitalization; but as emphasized by Fitzpatrick et al.,[18] when an adequate pericardiectomy was performed intracardiac pressures eventually returned to normal. Patients with active tuberculosis in whom incomplete decortications were done sometimes took a year or more before reaching normal pressures. When the diagnosis of tuberculosis is made on the pericardial tissue, antituberculous chemotherapy is continued with isoniazid, streptomycin, and paraminosalicylic acid for eighteen to twenty-four months.[22]

The operative mortality in this series was eight per cent (two patients). Patient No. 5 died suddenly on the ninth post-operative day, presumably from a pulmonary embolus; no autopsy was done. Patient No. 10 died five weeks after surgery from an overwhelming staphlococcal infection originating in his wound. The late death, two years post operatively, occurred in patient No. 14 who has catherization evidence of persistent constriction; he was being prepared for reoperation when he suddenly died. Patient No. 17 has an abnormal post operative cardiac catherization and limited exercise tolerance; we are presently trying to get him to agree to reoperation.

Discussion

The early pericardiectomies were surgeons' first attempts to treat disease of the heart; consequently, a historical review of this operation is like reading *Who's Who* in thoracic surgery.

Paul Dudley White presented this colorful story in 1933.[52] Claude Beck deserves special mention not only for his "Triad" of elevated venous pressure, low arterial pressure, and a quiet heart in diagnosing constrictive pericarditis but also for demonstrating in dogs the essential pathophysiology of constrictive pericarditis—impaired diastolic filling of the heart.[2] Several other clinical surgeons and researchers subsequently demonstrated that decortication of both ventricles including the A-V grooves and posterior surfaces was the essential part of a successful pericardiectomy but that constricting bands obstructing the vena cavae or atria should be searched for and lysed if found.[9,11,24,25,26,31,47,49] Several authors would take exception to this summary in technique as they strongly advocate complete decortication of the atria, cavae, and pulmonary veins.[14,17,32,34,42,45]

It is important to begin the decortication over the left ventricle to prevent acute right heart failure, and surgeons are almost unanimous in recommending early pericardiectomy because the decortication is easier and the myocardium more likely to recuperate early.[43,47,48] Myocardial atrophy and fibrosis are more likely to develop after long standing constriction.[16] Holman and Wilette advocated pericardiectomy even during active tuberculous pericarditis; the wisdom and safety of this surgery has been improved dramatically with the advent of good antituberculous chemotherapy.[25]

Mannix and Dennis in the early 1950's advocated pericardiectomy for chronic effusion before constriction developed.[33] They

emphasized the hazards of pericardiocentesis i.e. fatal hemorrhage from needle lacerations of the coronaries or myocardium, the need for repeated taps, and the risk of infection. Subsequently many authors have verified the effectiveness of pericardiectomy for chronic effusion.[1,37,41,44,45,47,50] The frequent failure of pericardial "windows" into the pleural space has been repeatedly recorded in literature.

Of special interest and pride to Virginians is that I. A. Bigger did the second successful pericardiectomy in America in 1929.[6] Other important contributions from this State include the catheterization studies from MCV[18] and an excellent review of the surgical treatment of constrictive pericarditis by Gardner Smith and William Muller from the University of Virginia in 1962.[47]

As the operation of pericardiectomy has evolved with the rest of surgery there has been a steady improvement in post operative results. In the 1930's and '40's the operative mortalities reported for pericardiectomy were in the twenty to thirty per cent range, with forty to fifty per cent of the patients being improved by surgery.[3,9,12,13,24,26,52] More recent series in the 1950's and '60's now report operative mortalities of zero to twenty per cent with up to eighty-four per cent of patients getting a good result from pericardiectomy.[5,8,14,17,19,32,36,41,45,47,53] The mortality rate of eight per cent (eleven per cent if the late death is included) in the present series compares very favorably with similar reports.

A large share of the literature is concerned with various etiologies of constrictive pericarditis necessitating periocardiectomy. The list now includes: tuberculosis,[22,25,32] viruses (especially Coxsackie B)[39] blunt and penetrating trauma,[1,27] uremia,[27] actinomycosis,[23] histoplasmosis,[40] staphlococcus,[4,51] pneumococcus,[47,48] meningococcus,[47,48] tularemia,[47,48] H. influenza[47,48] E. coli,[47,48] infectious mononucleosis,[47] lupus erythematosus,[54] rheumatoid disease,[30,35] rheumatic fever,[27] radiation,[37,47] and cholesterol pericarditis.[15,21,38]

In patients with these various diseases the constrictive pericarditis is usually just one of the many complications they have. The so-called "non-specific" or idiopathic pericarditis remains an enigma. Effler thinks that patients with this problem have a viral infection causing a hemorrhagic pericarditis which later organizes and constricts.[17] Robertson and co-workers in British Columbia studied an epidemic of pericarditis in that province where tuberculosis is virtually eradicated and labeled Coxsackie 5B as the culprit.[39]

The differential diagnosis of constrictive pericarditis must still consider: myocardial fibrosis, primary amyloidosis, endocardial fibroelastosis, and scleroderma heart disease. Cardiac catheterization cannot differentiate these forms of "restriction" from "constriction" in which case the surgeon must make the diagnosis.

In the final analysis the success of a pericardiectomy depends on:[11]

1. The completeness of the pericardiectomy
2. The presence or absence of continued infection
3. The extent of myocardial atrophy and fibrosis
4. The presence of constrictive pleuritis
5. The presence of irreversible liver damage
6. Persistent arrhythmias
7. Other systemic diseases i.e. hypertension, obesity, renal, etc.

Recent Developments

The diagnosis and etiologies of pericarditis and the surgical techniques of pericardiectomy are now well established and not very controversial. Most of the recent contributions have been in expanding the indications for pericardiectomy.

An important review of tuberculous

pericarditis among patients in Veterans Administration Hospitals was made by Hageman, D'Esopo, and Glenn in 1964.[22] They noted that prior to antituberculous chemotherapy and mortality rate for tuberculous pericarditis was eighty to ninety per cent. When streptomycin was used to treat tuberculous pericarditis the mortality dropped to forty-three per cent.

These authors then retrospectively studied forty-four patients treated from 1952 to 1955 with proven tuberculous pericarditis; twenty-three patients had received only medical therapy and twenty-one received chemotherapy combined with pericardiectomy. In essence, this study demonstrated that once patients developed evidence of significant venous hypertension, i.e. hepatomegaly, ascites, or peripheral edema, that survival could be improved threefold by pericardiectomy. Some patients survived with medical therapy alone, but they were patients who were started on good antituberculous chemotherapy: isoniazid, streptomycin, paraminosalicylic acid within twelve weeks or less from the onset of symptoms. Only four out of fourteen (twenty-nine per cent) who were started on drugs after five weeks of symptoms survived five years; whereas of seventeen patients started on drugs after five weeks who also had pericardiectomy, there were thirteen (seventy-seven per cent) survivors. Therefore, when one is dealing with a patient with a working diagnosis of tuberculous pericarditis in whom there was ever any evidence of venous hypertension and in whom drug therapy was started later than five weeks from the onset of symptoms early pericardiectomy is indicated.

Zinsser, Blakemore, and others have been strongly advocating pericardiectomy in patients with recurrent idiopathic pericarditis.[8,28,46,55,56] These are patients without constriction or tamponade from pericarditis, but patients who have recurrent pain, fever, pleuritis, weakness, and easy fatiguability. Frequently these patients gain complete relief with bed rest, but with exercise the pain and disability reoccurs. Steroids can abate these attacks of pericarditis, but in some patients the episodes are so frequent that prolonged steroid administration becomes hazardous. Pericardiectomy has been applied to these patients with immediate relief of pain and complete rehabilitation in a short period. No operative deaths have been reported in these patients. Two patients have been reported as having recurrent pericarditis post pericardiectomy.[20] The authors emphasize complete removal of the diaphragmatic portion of the pericardium, as sensory fibers coursing from the phrenic nerves are responsible for most pericardial pain.

Several recent reports have dealt with pericardiectomies being done as semi-emergencies for what has been termed acute constriction.[27] Constrictive pericarditis has been observed within a few weeks following radiation therapy for mediastinal malignancy[37] and after acute Coxsackie B infections.[39] Pyogenic pericardial infections are sometimes difficult to manage with tube drainage and/or repeated pericardiocentesis so several surgeons have safely excised the infected part in the early phase of infection.[4,51]

Cholesterol pericarditis can be a diagnostic dilemma. This diagnosis is made by detecting the opalescent nature of the pericardial fluid and then identifying cholesterol crystals. Myxedema cholesterol pericarditis is successfully treated with thyroid extract. Tuberculous cholesterol pericarditis, if treated early enough, will respond to antituberculous chemotherapy. However, idiopathic cholesterol pericarditis does not respond to medical therapy, but patients have been cured with pericardiectomy.[15,21,38]

Primary mesotheliomas or metastatic neoplasms of the pericardium can cause tamponade from effusions or constriction. Usually this surgery is only palliative and reserved for use when more conservative

measures fail. Single tumors resected for cure are rare.[27]

Finally, a recent innovation published by Bloodwell et al. is the use of partial cardiopulmonary bypass to assist in difficult pericardiectomies. This technique would add greater safety and be particularly helpful in repairing any inadvertent cardiac perforations. These authors employed a femoral vein-femoral artery system with a bubble oxygenator.[10]

Summary

Twenty-six patients subjected to pericardiectomy were briefly analyzed; tuberculosis was noted to account for thirty-five per cent of the cases. Highlights in the development of the medical and surgical care of constrictive and effusive pericarditis were reviewed. Special attention was given to recurrent idiopathic pericarditis and tuberculous pericarditis where drug therapy was delayed; a more aggressive approach was recommended for these patients.

ADDENDUM

In the first four months of 1969 four additional pericardiectomies have been done at MCV. Two patients had chronic constrictive pericarditis; one was tuberculous, and the second was "non-specific". An emergency pericardiectomy was done in a three year old child for acute constriction after two weeks of inadequate tube drainage of a purulent pneumococcal pericarditis. An eighteen year old boy who was three years postoperative for closure of a ventricular septal defect and ligation of a patent ductus arteriosus required a pericardiectomy for recurrent pericarditis of three months duration.

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(Advertisement in Virginia Medical Monthly, 1892)

The Evaluation of Vertigo by the Otologist

CARY N. MOON, JR., M.D.
Charlottesville, Virginia

An attack of severe vertigo is a frightening experience. It may be caused by several disorders but a thorough history and examination, audiological and vestibular evaluation with radiography will most frequently afford a specific diagnosis.

OUR WORD VERTIGO is the Latin word vertigo, and is defined as a turning or whirling around. It is a feeling of abnormal movements within one's self or seeing abnormal movements in one's surroundings, this difference being of no known diagnostic significance. Vertigo may cause nausea and vomiting, but is not generally associated with fainting, blackout, or unconsciousness. The word, dizzy, is of German and Anglo-Saxon origin, and literally means foolish or stupid, but in modern usage, has become synonymous with vertigo.[1,2]

The vestibular system consists of the three semicircular canals, the utricle, and the saccule—all within the inner ear, the vestibular division of the eighth nerve, and the vestibular nuclei in the brain stem. Possibly more than 75 per cent of patients with the chief complaint of "dizziness" have a disturbance at some point in the equilibrium sensory organ. In the past, these patients have been relatively neglected because of inadequate diagnostic ability and because of nonspecific medication (Fig. 1).

It is the responsibility of the otologist to determine whether or not there is a disequilibrium and, if so, whether this is due to a problem within the vestibular system. The

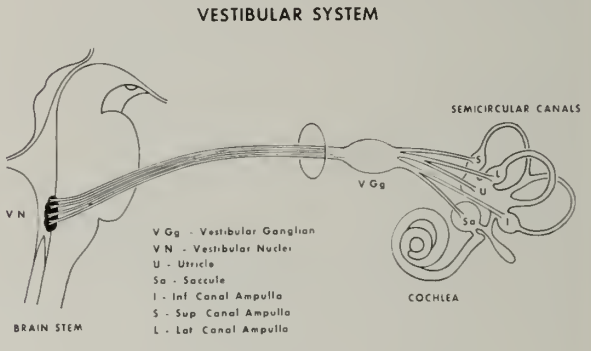


Fig. 1

diagnoses to be considered are: endolymphatic hydrops (Meniere's disorder), vestibular neuronitis, paroxysmal positional vertigo, vascular inadequacy, eighth nerve lesions (acoustic neuromas, etc.), toxic vertigo, trauma, and vertigo secondary to middle-ear-mastoid infections.

The interpretation of the results of audiological tests, the findings from hot and cold vestibular testing, with electronystagmography and x-ray tomography examinations have improved our ability to diagnose vertigo. Investigations of drug reactions have given us the knowledge of how and where specific medications are effective.

The history will most frequently suggest diagnostic possibilities and direct the course of further investigation. The date of onset of the initial attack and the patient's description of that attack are most important. The frequency, severity, and duration of the episodes of dizziness should be noted.

Presented at the meeting of The Medical Society of Virginia at Virginia Beach, October 17, 1969.

From the Department of Otolaryngology, University of Virginia School of Medicine.

The presence or absence of related symptoms, such as tinnitus, deafness, nausea and vomiting, will help in locating and identifying the trouble. Does the patient stagger, is there a loss of balance, does change of position precipitate or aggravate symptoms, and how does the patient handle the acute episode? The answers to these questions will aid in establishing a specific diagnosis.

Inspection of the ear canals and the tympanic membranes, preferably with the microscope and with air pressure movement of the drum, will reveal the presence or absence of middle ear disease.

Tuning fork testing is a reliable gross evaluation of the patient's hearing, and these findings must agree with the results obtained by the audiologist and the audiometer.

Audiometric testing will determine the threshold of hearing in each ear and, with bone conduction, will show normal hearing bilaterally, or a conduction loss, or a sensori-neural loss, or a combined loss of hearing in one or both ears. Speech discrimination ability is good to excellent with conduction losses, fair with inner ear disturbance, and very poor with nerve involvement. Special audiological tests will suggest the probability of inner ear to eighth nerve involvement. The patient with vertigo has nystagmus, and the technique of recording this characteristic eye movement is nystagmography. The cornea of the eye has a positive electrical charge, and the retina, a negative electrical charge. Therefore, a voltage differential exists between the cornea and the retina. By placing electrodes at the lateral canthus of each eye, the electrical potential will deflect a needle and record a tracing. It permits the detection of nystagmus with open and closed eyes or open eyes in the dark, and allows a quantitative measurement of the frequency, duration, and velocity of the nystagmus. Hot and cold water irrigation of the ear canals produces nystagmus by thermal stimulation of the peripheral vestibular apparatus, and, with nystagmography, gives us a readable tracing. The ENG (electronystagmogram) with calorics will indicate paresis or paralysis of one vestibular system as compared to the normal response, or it will demonstrate an uncoordinated response suggesting the possibility of a central lesion. The detection and accurate description of nystagmus—spontaneous, positional, or evoked—are most important observations in evaluating patients with problems of dizziness.[3]

Conventional radiography of the temporal bone obscures small anatomical details because of the superimposition of multiple structures, and especially the density of the mastoid areas. Sectional radiography (tomography) is a method of examination by erasing details in front of and behind the desired plane of study. The Polytome (Philips-Massiot Company) will focus on a plane of one millimeter, and permits a multiple sectioning of the middle ear, inner ear, and the internal auditory canal. A small acoustic neuroma within the internal auditory canal can be clearly demonstrated with contrast media and polytomography.

Endolymphatic hydrops (Meniere's disorder) is suggested by the history of sudden severe episodes of vertigo usually with nausea and vomiting, which may last a few minutes to a few hours. The patient experiences a feeling of pressure in the involved ear. Middle frequency tinnitus (approximately 1500 Hz) and a low frequency hearing loss are present with and immediately after the first few attacks. Occasionally Meniere's disorder may be suspected even prior to the first episode of vertigo because of the pressure feeling in the involved ear, the tinnitus, and the hearing loss. Endolymphatic hydrops is diagnosed by the audiological work-up; the changing air conduction threshold, better hearing between attacks with loss of hearing during and after episodes of vertigo being characteristic of this condition. ENG usually will show a hypoactive response to thermal stimulation in the involved ear. Internal auditory canal and temporal bone x-rays should be normal.

The diagnosis of Meniere's disorder is easy to establish and quite definite (Fig. 2).

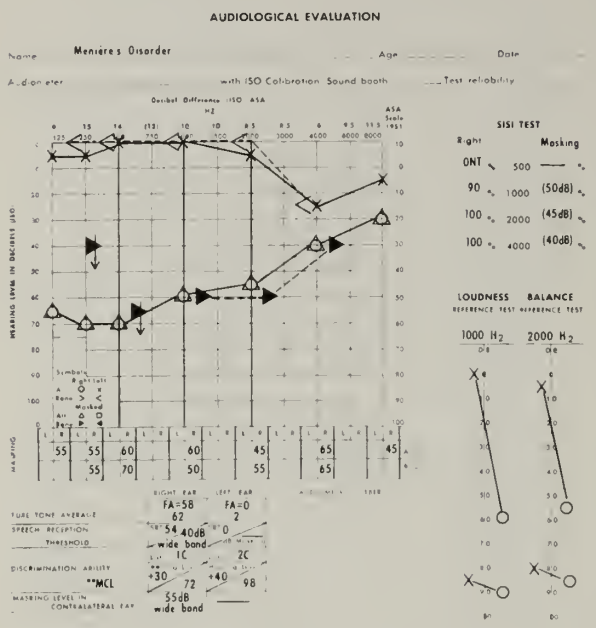


Fig. 2

Vestibular neuronitis is an equilibrium disturbance of vague, inflammatory origin. There are no cochlear symptoms. There is a reduced caloric reaction on the involved side. The equilibrium disturbance gradually decreases, and it may become postural and paroxysmal before complete recovery. It may follow a febrile illness and might be caused by a virus.

The vertigo associated with paroxysmal positional nystagmus is usually mild, most frequently occurs after 60 years of age, may last a few months, and is thought to be possibly of vascular origin. There is normal auditory function or symmetrical high frequency loss (early presbycusis), and caloric tests are normal.

Vertebral-basilar artery insufficiency is the cause of vertigo on sudden changes in position, such as arising quickly. The episode of vertigo is quite brief, lasting only a few seconds, and is rarely accompanied by nausea. Audiometric tests are normal, but may show a symmetrical sensori-neural hearing loss in the higher frequencies. This problem is encountered in later life and is most often associated with arteriosclerosis.

Acoustic neuroma most frequently arises from the vestibular division of the eighth nerve within the internal auditory canal and may cause a mild equilibrium disturbance. The caloric response is usually hypoactive on the involved side, and the audiological testing will show findings suggestive of a neural lesion, that is, very poor discrimination ability, a positive tone decay, and negative recruitment. Polytomography of the internal auditory canal might show erosion, flaring and shortening of the canal, or x-ray with contrast media will reveal a filling defect of the internal auditory canal when a tumor is present. It is the responsibility of the otologist to determine the presence or absence of a tumor in the internal auditory canal whenever the possibility of such a lesion is suspected.

Ototoxic drugs should be used only when absolutely indicated and necessary. If possible, a base line of cochlear and vestibular function should be determined before beginning treatment with these medicines. The hearing loss following the use of streptomycin, dihydrostreptomycin, kanamycin, polymyxin B, and vancomycin is irreversible.

Trauma to the head may cause a vestibular system injury with nystagmus and vertigo. The hearing loss resulting from head injury is sensori-neural, conductive, or a combination of both. A fracture extending through the labyrinth will be evidenced by a marked disequilibrium and a severe sensori-neural hearing loss. Most certainly, any patient receiving sufficient head trauma to cause loss of consciousness should have a radiological survey, but, in addition, audiometry and nystagmography will aid in making an early diagnosis of a basal skull fracture that might otherwise be missed.

Perilabyrinthitis with vertigo results from middle ear and/or mastoid infections. A cholesteatoma eroding the peripheral vestibular apparatus can create a semicircular bony canal fistula. The diagnosis is usually

apparent from the history and examination; manipulation or pressure applied to a cholesteatoma overlying a fistular will produce vertigo and nystagmus.

The initial attack of vertigo, particularly in Meniere's disorder, is a frightening experience. Therefore, the diagnosis and a thorough explanation of the problem with discussion as to what one might expect in the future will generally relieve anxiety. There is no specific medication which will prevent the recurrent bouts of vertigo so typical of endolymphatic hydrops. Drugs can be administered which will make the patient more comfortable in the postattack periods and possibly reduce the severity of the acute episode. Thiethylperazine maleate (Torecan maleate) is probably the most effective in controlling the symptoms resulting from an attack of Meniere's disorder.[4] Surgery is available for incapacitating refractory symptoms.

Antihistamines and tranquilizers work better on central pathway problems of equilibrium.

Sedatives are effective in controlling acute symptoms. There seems to be a brain stem narcosis associated with vertigo.

Thiethylperazine should give symptomatic relief to the patient with vestibular neuronitis. Again, being able to reassure the individual that the disequilibrium will subside completely is most helpful.

The patient with paroxysmal positional vertigo should avoid the aggravating head position and, with vertebral vasilar artery insufficiency, should change body positions carefully and thereby prevent the disequilibrium.

A thorough history and examination, audiological and vestibular evaluation with radiography, which most frequently will afford a specific diagnosis, should be reassuring to the patient and the otologist.

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Management of Laryngo-Tracheal Injuries

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Early diagnosis and definitive treatment improves the chances for a good result in laryngo-tracheal injuries. Unfortunately, early recognition may be quite difficult.

MANAGEMENT of the acutely injured patient, with or without multiple injuries, requires a broad base of knowledge, a high index of diagnostic suspicion and sound judgment. The required knowledge may encompass the entire surgical specialty spectrum; thus the "on call" physician has a great responsibility thrust upon him in the emergency room. Immediate assessment establishes the initial priority of treatment. However, once life-saving measures are instituted to stabilize the patient, and after this is accomplished, re-evaluation should dictate a second level of priority in the management. It is at this time that the physician must be most cognizant of "hidden injuries" whose signs and symptoms may go unnoticed or their import unappreciated. They may involve the neck and its vital structures: specifically the laryngo-tracheal and pharyngo-esophageal complexes. Trauma to these areas may prove fatal acutely, but more often the late complications may result in lifetime disabilities of such functional and socioeconomic importance that early diagnosis, proper management and treatment are mandatory for optimal results.

From the Department of Otolaryngology, University of Virginia Hospital, Charlottesville.

Read before the Virginia Society of Ophthalmology and Otolaryngology, Roanoke, May 13, 1969.

Case Reports

To illustrate, the following cases of various types and degrees of trauma are from a group of 25 patients treated either acutely or as post injury complications at the University of Virginia Hospital since 1963. The clinical experience with a group of 28 similarly injured patients was reported in 1962 by one of us.[1]

Case I. W. J. (UVa # 36 41 06), a 12 year old male was accidentally struck in the neck by a fist during a playground wrestling episode at school. He continued playing. On returning to the classroom, it was noted that his voice was hoarse, but nothing was done until he coughed up a few small blood clots. Emergency room evaluation established that the airway was good; hoarseness and hemoptysis were present as well as subcutaneous emphysema of the neck. An abnormal thyroid cartilage was appreciated by palpation. The patient was admitted and indirect laryngoscopy revealed transglottic trauma including hematoma and edema of both arytenoids and an immobile left true vocal cord. Under general anesthesia after tracheotomy was performed, exploration of the larynx by thyrotomy revealed displaced fractures of the left thyroid cartilage which were reduced and immobilized by direct wiring. Three years later the patient has an excellent airway and good voice.

Case II. S. M. (UVa # 48 54 64), a 40 year old male was the driver of a compact auto hit head-on by an oncoming vehicle. He struck the steering wheel and windshield, but was not unconscious. Enroute to

the hospital his breathing became progressively more difficult, so that on arrival in the emergency room, he was cyanotic and respiratory arrest was imminent. A life-saving one-stab tracheotomy established an airway and the patient immediately improved. Further evaluation revealed other injuries to be minor except for a dislocated right hip. Two days after admission, the patient underwent revision of tracheotomy, laryngoscopy, and thyrotomy at which time massive endolaryngeal hematoma and edema were present as well as an iatrogenic division of the cricoid cartilage. A subglottic stent was wired in place and removed three months postoperatively. Two years later the patient has an excellent airway and a good voice.

Case III. C. M. (UVa # 58 17 86), a 17 year old male lost control of his car which careened off the highway striking a stone wall. He required an immediate tracheotomy at his local hospital. No further evaluation ensued until two weeks post-tracheotomy when efforts to decannulate the patient were unsuccessful. He was referred to a medical center where exploration of the laryngo-trachea was carried out. Scarred tracheal rings and cricoid were partially excised. A stent was left in place four months. Now two years post-injury the patient has undergone multiple procedures at two medical centers. He has a fair airway, but a poor voice, which is improving with speech therapy. Total extubation has not yet been completely successful.

Case IV. L.G. (UVa # 58 48 53), a 7 year old male fell and struck his neck on the edge of a concrete step. He continued playing but within the hour was hoarse and dyspneic with exertion. Admission to the intensive care unit was required until the patient's airway improved and subsequent indirect laryngoscopy revealed resolving hematoma of the left subglottic space and bilateral false cord edema. He was treated with supportive measures and after close observation for three days, the presenting signs and symptoms were minimal or absent. At discharge, the patient was asymptomatic with a good voice and airway.

Case V. D. P. (UVa # 48 45 03), a 14 year old male was struck at clost range in the face, neck and upper chest by an accidental shotgun blast of buck shot. The initial treatment required emergency closed thoracostomies for bilateral pneumothorax. A tracheal cutaneous fistula and massive subcutaneous emphysema was present. Exploration of the neck, laryngoscopy, esophagoscopy, tracheoscopy, and thyrotomy were performed as emergency procedures. Fractures of the thyroid cartilages required internal splinting. Five years post-injury he has an excellent airway and voice.

Comment

It should be noted that even with early recognition, diagnosis and accepted treatment, good results are not always forthcoming and no predictions should ever be ventured.

A simple clinical classification suffices for the emergency room evaluation:

Is the injury blunt or sharp?
Is the injury closed or open?

A more sophisticated classification as outlined by Ogura[2] or Montgomery[3] is useful in planning the definitive treatment.

In this series of 25 patients, 20 patients received blunt trauma to the neck, 13 from automobile accidents and seven from other causes. All 20 of these were closed injuries. Five patients were injured via a modality which left an open wound with various depths of penetration.

The pathophysiology and mechanism of these injuries are fairly well understood.[4] Direct trauma may crush structures. Tremendous forces develop from sudden deceleration or acceleration which shear the mucosa away from its loose attachments to the cartilages. Hemorrhage and edema quickly result: a fist strikes the larynx causing sudden acceleration, a moving vehicle suddenly decelerates, and with the passenger's

inertia, a forehead or jaw strikes the windshield, dash, steering wheel, or a stationary object, and again powerful shearing forces may result. Such blunt trauma may directly crush the jaw, trachea, or laryngeal cartilages, but often the upper neck is protected by the open jaw and flexed neck so that the direct force is absorbed and indirectly transmitted, thus leaving an innocuous appearing area. Open or penetrating injuries occur as a result of missiles of various velocities or sharp instruments. High velocity missiles may leave neat small wounds of entry or exit but widespread concussion trauma is not detected until later. Low velocity missiles cause local injury which is more easily assessed. Immediate exploration of open or penetrating wounds with debridement and removal of foreign bodies is the generally accepted treatment and management.

Without a high index of suspicion blunt trauma to the neck may be dismissed as insignificant. Table I illustrates a check list

TABLE I

LARYNGOTRACHEAL AND PHARYNGOESOPHAGEAL TRAUMA
Diagnostic-Checklist

"short of breath"
- Dyspnea
  - Compromised airway:
    - a. hematoma, edema of larynx-trachea
    - b. recurrent nerve injury
  - Chest Injuries:
    - a. atelectasis (aspiration)
    - b. pneumothorax

"hoarse" and/or "hurts to talk"
- Dysphonia
  - Edema, hematoma, and/or fractures of cartilages

"hurts to swallow"
- Dysphagia
  - Lacerations of mucosa: fracture of cartilages

"spitting up blood"
- Hemoptysis; Hemetemesis
  - Lacerations of mucosa of larynx, trachea, esophagus

"swollen neck"
- Crepitus; subcutaneous emphysema
  - Lacerations of mucosa

which we have found useful for those inexperienced in recognition of these injuries. The more obvious symptoms of cough, dyspnea, dysphonia, or dysphagia may be missed if the patient isn't queried or is initially unconscious: the signs of acute respiratory distress (e.g., dyspnea, stridor, cyanosis), hemoptysis, or subcutaneous emphysema should never be missed and require immediate evaluation. Minimal evidence of neck trauma (e.g., contusions, abrasions, superficial lacerations, and ecchymosis) should alert the physician to evaluate fully the deeper cervical structures.

TABLE II

LARYNGOTRACHEAL AND PHARYNGOESOPHAGEAL TRAUMA
Do's and Don'ts

I. *In Emergency Room*

Do:

- Provide airway
- Diagnose and treat shock
- Prevent further injury (e.g., splint neck, fractures)
- Remain diagnostically suspicious
- Get only necessary x-rays
- Get pertinent historical information (how, when, where)

Don't:

- Substitute intubation for tracheotomy
- Prematurely attempt endoscopy
- Explore open wound in E.R.

II. *In Intensive Care Unit*

Do:

- Give specific nursing instructions
- Get appropriate consultation advice
- Re-evaluate by repeat physical examination

Don't:

- Delay further evaluation
- Over utilize I.C.C.

The diagnosis of airway obstruction and/or shock takes precedence over the other considerations and appropriate treatment is to be instituted immediately. Where there may be injury to the neck causing airway impairment, tracheotomy and not endotracheal intubation is the procedure of choice. Attempts at indirect or direct laryngoscopy even by those most skilled is containdicated prior to the establishment of a satisfactory airway. A precarious airway may be lost completely, further injury may result, or precious minutes lost by attempts

at laryngoscopy or intubation. Less critical patients not requiring initial tracheotomy must be continuously observed with full facilities nearby for tracheotomy should this become necessary.

Table III

Laryngotracheal and Pharyngoesophageal Trauma Statistics 1962-1968: 25 Patients

Modalities:		
Blunt Injuries:		
(all closed)		
Motor vehicles		13
Other		7
Sharp Injuries:		
(all open)		
GSW, stab wounds, etc.		5
Treatment:		
Observation	7	
Tracheotomy:		
Emergency	5	
Urgent/Elective	8	
Laryngoscopy (direct)	18	
Surgical Procedures	11	
Results:		
Good (good airway/voice)		18
Fair (adequate airway/fair voice)		4
Poor (compromised airway requiring tracheotomy/poor voice)		2
Deaths		1

Following complete evaluation and stabilization, it is highly desirable to perform diagnostic endoscopy within the first 48 to 72 hours if not contraindicated by the patient's condition or other injuries. If definitive treatment cannot be instituted by the 10-12th day, the repair, reduction and anatomical immobilization by direct wiring and/or translumen splinting becomes quite difficult for malaligned fixation by scarring will have occurred.

In the interim between injury and definitive treatment, supportive measures are undertaken. Complete voice rest should be enforced and efforts to speak and swallow vigorously discouraged. Appropriate intravenous fluids, electrolytes, and calories are given. A three to four day course of steroids is used by us and thought to be beneficial. Parenteral enzymes may be helpful. Prophylactic antibiotics should be given. Blind passage of a nasogastric tube is contraindicated. Exact and specific nursing instructions for management of oral secretions, tracheobronchial secretions, and tracheotomy care should be given, for careless, haphazard suctioning or changing of tracheotomy tubes may further complicate the existing injuries. After discharge, frequent outpatient visits are required by those patients who must continue to have a tracheotomy with or without a stent and their full cooperation is an essential part of the late postoperative management.

Summary

Recognition of laryngo-tracheal and pharyngoesophageal cervical trauma requires a high index of suspicion, knowledgable assessment of symptoms and signs, early diagnostic procedures, and early definitive treatment. Though infrequent, these injuries are commonly missed initially and may become long term management problems with permanent disabilities. Even with early diagnosis and definitive treatment, a satisfactory final result is not assured; however, the results from those injuries recognized early are far more satisfactory to those results from "hidden" injuries recognized late.

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Clinicopathological Conference . . . .

Exanthem and Pneumonia in 3-Year-Old Girl

Edited by
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Enrique Gerszten, Assistant Professor of Pathology, M.C.V.

Clinical History

A 3¾ year old Negro female was referred to the Medical College of Virginia on 4/26/69 because of "fever and pneumonia".

Patient had been in good health until two weeks before, when she and three siblings had all developed a papular rash starting on the face, spreading to involve the trunk. The rash was accompanied by fever, hacking cough, rhinorrhea and puffy eyes. The rash persisted for three days and never assumed a vesicular or pustular character. The patient's siblings became afebrile after the subsidence of the rash and had no further difficulty; however, the patient continued to have cough and anorexia. She was taken to see her local physician and was treated with cough medicine and penicillin, but continued to have symptoms. One day prior to admission, she became febrile and tachypneic, and the mother noted grunting respirations. She was seen in Greenville Memorial Hospital Emergency Room by her local physician, and a diagnosis of pneumonia was made. She was started on Ampicillin and was immediately referred to the Medical College of Virginia. The mother states the child had had no diarrhea or vomiting, although her oral intake of food and fluids has been decreased. Her urine output, however, had been adequate. She had developed purplish discolorations on her right shoulder, buttocks and knees the day prior to admission.

Review of Systems: Unremarkable except as in the present illness.

Past Medical History: The mother's pregnancy was uncomplicated. The patient weighed 8 lbs., 7 oz. at birth, walked at 11 months, talked at one and a half years and was toilet trained at two years. No allergies were known. She had received no immunizations and had had no previous hospitalizations.

Family History: Mother and father were in good health. Patient had three siblings, ages 4, 2 and 1 year, all of whom were now well. A maternal great-grandmother was said to have had diabetes.

Physical Examination: BP 90/70, R 45, P 130, T 102°. Patient was a very ill child with a fading hyperpigmented skin rash over the whole body and purplish flat discolorations with rounded margins on the medial aspect of both knees and on the right shoulder. No other skin lesions were noted. There was a bullous myringitis on the right tympanic membrane; the left tympanic membrane was dull but a light reflex was present. The pupils were equal and reactive to light. There was congestion of the nasal mucosa. The pharynx was erythematous and there was purulent material in the nasopharynx. The neck was supple. There was no significant lymphadenopathy. Chest was symmetrical. Lungs were dull to percussion bilaterally with E-A changes diffusely over both lung fields. There were diffuse moist rales with rhonchi especially in the midlung

fields. A sinus tachycardia was present but no murmurs were detected. The abdomen was slightly distended and soft. Bowel sounds were present. There was no organ enlargement detectable in the abdomen and no masses were found. Neuromuscular was normal except for generalized weakness. Neurological examination was within normal limits.

Laboratory Data: The urine was yellow, cloudy and acid, with a specific gravity of 1.017. There was 1+ proteinuria; sugar, acetone and blood were negative. Microscopic examination of the urine sediment revealed many squamous cells/hpf, 15-20 WBC/hpf, but only rare red cells. A moderate number of bacteria were seen, and a slight amount of amorphous material. There were 3-5 hyaline casts and 4-6 coarsely granular casts/hpf. Hemoglobin 10.5 gm%, white count 6,500/mm^3 with 62% neutrophils, 1% eosinophils, 36% lymphocytes, 1% monocytes. BUN 39 mg%; sugar 84 mg.% Serum sodium 141 mEq/l, potassium 5.3 mEq/l, chlorides 100 mEq/l, and CO_2 22. A lumbar puncture was performed. The spinal fluid was clear and colorless, with no red cells and no white cells. Cerebrospinal fluid sugar was 72 mg%, with a total protein of 27 mg%.

Chest x-ray revealed extensive bilateral patchy consolidation in the lungs. Cardiac border was within normal limits. There was no definite evidence of pleural effusion. Flat and upright films of the abdomen revealed generalized gaseous distension of small and large bowel.

Patient was placed in a croupette with oxygen mist, started on antibiotics and given intravenous fluids. By the following morning, she was showing more abdominal distention. A nasogastric tube was passed and 30 cc of fecal material was suctioned from the stomach. The respiratory rate rose to 60-80 per minute and the patient became progressively more dyspneic. An attempt was made to obtain blood gas studies but while this was being done, the patient ceased respirations and developed bradycardia. The child was intubated, and pus and blood appeared to be exuding from the trachea. Tube breathing was instituted, but the child underwent cardiac arrest and attempts at resuscitation were unsuccessful.

Blood cultures and cultures of the nasopharyx returned after death were negative for tuberculosis, fungi and pathogenic bacteria.

An autopsy was obtained.

Clinical Discussion

Dr. Peter Mamunes: I hate to beg excuses before I start, but the quality of the protocol leaves something to be desired. I feel that 90% of making a diagnosis in pediatrics is taking an adequate history. If you do not know the diagnosis by the time you have taken the history, you are probably not going to know what the diagnosis is.

At any rate, this is a 3¾ year old Negro female who was referred to the MCV Hospitals with fever and pneumonia. The first thing to notice is that this illness has come on in April. There are certain respiratory diseases in children which occur mainly at other times of the year, namely the enteroviruses. They rarely cause respiratory infections, but occasionally do, and occasionally cause rash and petechiae which occur later. Measles, on the other hand, is common in March and April, although it occurs at any time of the year. Mycoplasma infections occur at any time of the year, but much less often occur in spring than in summer, so that April probably puts mycoplasm lower down on the list too.

This patient "had been in good health until two weeks prior to admission when she and three siblings had all developed a papular rash starting on the face and spreading to involve the trunk." The occurrence of any infectious disease in all four siblings at one time is extremely unusual. It suggests a highly contagious infection, and even then, almost never do you get the simultaneous

occurrence of the rash and the illness at exactly the same time. We would like to know whether the rash spread over the whole body in one day. The measles rash usually takes two or three days before it goes from the forehead, behind the ears and down to the feet. The enteroviruses or mycoplasma, if they cause a rash, usually spread over the body in 24 hours; certainly it would be very helpful to know how long it took for the rash to progress from the face and go on down to the trunk and the rest of the body. Later on, the rash was accompanied by fever, cough, rhinorrhea and puffy eyes. It would also be nice to know whether this rash came on before or after the onset of these other symptoms. With rubeola or measles, the children characteristically have cough, rhinorrhea and fever for 2 or 3 days before the rash appears.

How much fever did these children have? Most children with a typical case of measles will certainly run fevers of 102-104°. Or was this a low-grade fever, more suggestive of other viral infections? The most common viruses causing respiratory disease in children (parainfluenza and influenza viruses) rarely cause a rash. Thus, with rash and respiratory symptoms, we are left pretty much with rubeola, mycoplasma and possibly the enteroviruses.

This "rash persisted for three days and never assumed a vesicular or pustular character", ruling out chicken pox. I have only mentioned viruses here, since the only bacterial infection that is this contagious is scarlet fever—but, of course, scarlet fever does not very often cause a hacking cough and very rarely affects children under 2 or 3 years of age, while in this case 1 and 2 year old siblings of the patient were involved.

The patient's siblings became afebrile after subsidence of the rash and had no further difficulty, but the patient continued to have cough and anorexia. We do not know whether the fever persisted or not, but she was taken to her local physician and was treated with cough medicine and penicillin, but continued to have symptoms. Although we do not know the details of treatment, I am going to forget about the penicillin from here on, although any child who has an unusual course with a purpuric eruption could have a pencillin reaction.

One day prior to admission, she became tachypneic, with grunting respirations, and a diagnosis of pneumonia was made. Now the question is, is this pneumonia a new illness, a continuation of the earlier illness, or an exacerbation of a previous illness? If this child had had rubeola, it is a possibility that she exacerbated tuberculosis. However, the subsequent course of a rapid demise mitigates against this.

She developed purplish discolorations on her shoulder, buttocks and the medial aspects of both knees on the day prior to admission. This is obviously very critical in this CPC. In the physical examination, it just says they are flat and have some borders to them, but I have no idea whether they are 1 mm or 50 mm in size. Obviously, one picture is worth a thousand words, but we are just going to have to guess what these purplish discolorations were. First of all, they could have been petechiae. Rubeola can, of course, be associated with idiopathic thrombocytopenic purpura subsequently and give you a rash like this. There are some virus infections that have been found recently to be associated with petechial eruptions, but these occur within the first few days after the infection. For instance, Coxsackie A has been shown to cause a typical measles picture—rash, cough, fever—and then a few days later or even at the time of these symptoms, a petechial eruption. Echo 9 has been shown to cause actually a purpuric rash like that of anaphylactoid purpura and can cause respiratory symptoms. There is a recent report in the literature of a child who developed a Coxsackie A infection (a fatal pneumonia) about a week following rubeola. Thus, we have all sorts of possibilities here. This child could have had rubeola first, 10 days later contracted

another viral infection with a rash, and rapidly died from a fatal pneumonia. We don't know because we don't know what the eruption looked like, other than the fact that it was purple.

What else could this be? If course, this could be septic emboli from SBE, but these are usually peripheral, so I would doubt that. There are no murmurs, there is no heart disease evident from the subsequent course here.

What about other viruses? Most of the viral agents that cause pneumonia don't cause a purpuric eruption. However, the mycoplasma pneumonia organism has been shown to cause a Stevens-Johnson-like syndrome with ulcers in the mouth and peripheral bullae on the extremities, thought to be some type of hypersensitivity reaction. However, mycoplasma pneumonia does not typically cause pneumonia in children under 5; most cases are in the 5-10 year age range.

How contagious is mycoplasma pneumonia? It depends a lot on socio-economic status and crowding. In an epidemic in an institution of hospitalized retarded children, the infectivity rate was 90%, so that all four siblings could have been involved at the same time with mycoplasma pneumonia, or this child could have contracted mycoplasma pneumonia subsequent to another viral illness. On admission, we could try to make this diagnosis by looking for cold agglutinins, since these are elevated by the second week of the illness. Even complement fixation or HI antibodies can be present as early as 2 weeks after the onset of the disease.

In anaphylactoid purpura, the areas involved are those described—buttocks, arms and legs. If these are purpuric lesions, could this be anaphylactoid purpura? The other parts of the triad of anaphylactoid purpura (in addition to purpura) are gastrointestinal and renal involvement, which we do have to a slight extent in the subsequent course, but not the pneumonia that has been described here in the protocol. I don't think it would lead to such a rapid demise unless there were severe bleeding.

We also see purplish infiltrative lesions in histiocytosis or reticuloendotheliosis, but these children do not rapidly die in a day. The lesions are usually elevated, and not flat as has been described in the physical examination.

You always have to think of trauma when a child comes in with purplish discolorations of the skin. Certainly the large infiltrations of the chest that have been described here would suggest that this is probably not just trauma, but certainly you would have to think about it and at least get some long bone x-rays and rib x-rays, looking for evidence of trauma in the past.

I have left for last the most likely cause, I think, for these purpuric eruption, the possibility that this child was undergoing a consumptive coagulopathy or diffuse intravascular coagulation. I will discuss that later.

I purposely went through a differential before I got to the past medical history, physical examination and lab work because, as I said, 90% of making a diagnosis in Pediatrics is analyzing the present history. The past medical history is of no help, except to say that the child had not been immunized against measles, so was a candidate for measles.

Family history again was non-contributory. We do not know whether the siblings were immunized against measles or not, nor whether they had a previous history of measles. There is no family history of tuberculosis, so that we can think a little less of that possibility.

In the physical examination, the pulse of 130, temperature of 102, and respiratory rate of 45 are consistent with the toxic state and the pneumonia that is present. I would like to see the height and weight, just to give me an indication of the previous well-being of the child. The patient was a very ill child with a fading, hyperpigmented rash over the whole body and purplish flat dis-

colorations with rounded margins at the knees and right shoulder. This hyperpigmented skin rash certainly is most consistent with rubeola. The other virus infections that cause rashes can leave some hyperpigmentation of the skin, but much less likely so than with measles. This fading pigmented rash has also been described with mycoplasma.

There was a bullous myringitis on the right tymphanic membrane and the left membrane was dull. Bullous myringitis up until about 1962 was always considered to be viral, but with middle ear cultures now, we have pretty well shown that H. influenza and mycoplasma can cause it, and so could a bleeding disorder in this case.

The congested nasal mucosa, red pharynx, and purulent material in the nasopharynx just go along with the respiratory infection, and don't help me much at all. The diffuse E-A change over the lungs (egophony) is said to usually indicate a pleural effusion over a collapsed or consolidated lung. But in this case, subsequent chest x-rays are said not to show any effusion, but just a consolidated pneumonia. The auscultory findings are said to be moist rales, but they don't describe whether the breath sounds are decreased or increased. One would think if there were E-A changes, either decreased breath sounds or perhaps increased breath sounds from the consolidated area would be present.

The rest of the physical examination is not helpful, so we'll go on to the laboratory data. The urine is described with abnormalities of 1+ protein, 15-20 white cells, a rare red cell and some casts. I always like to know how the urine was collected, how quickly it was examined, etc. With a child who is acutely ill, febrile and perhaps dehydrated, these findings are very difficult to interpret. They certainly suggest the possibility of renal involvement with a BUN of 39, but not necessarily so if the child were dehydrated. Unfortunately, the physical examination does not describe the state of hydration of this patient, although she was described as having decreased fluid intake before admission.

The rest of the laboratory work is all within normal limits. We certainly would like to know what the platelets looked like on peripheral smear, and also the red cells, because in intravascular coagulation you do get abnormally shaped cells quite often.

Chest x-ray, I am told, is not available, but we do have a flat plate that perhaps we can have interpreted at this time.

Dr. Harold Floyd: Luckily, in the abdominal film, we can see ⅔ of the lungs. They are full of infiltrations, probably alveolar in character. This picture is non-specific, since a number of entities can do this in acute fashion in children. There is no evidence of free air on the hemidiaphragms.

In the abdomen, there is distended bowel, and its location would suggest that it is colon. This pattern is probably related to the child swallowing air and probably adynamic ileus. I doubt whether we will find at post any evidence of mechanical obstruction.

Dr. Mamunes: Thank you.

I had expected to see a little more infiltrate in the lungs from the description of the x-rays that were taken. This looks like interstitial rather than a true consolidated or lobar pneumonia and, of course, leads you a little more toward the viral etiology rather than a secondary bacterial infection. However, we know that the x-rays are certainly not diagnostic of the type of pneumonia. Certainly, any of the viral pneumonias can cause a good consolidated lobar pneumonia, and some of the bacterials, including Staphylococcal pneumonia, can cause a diffuse pneumonia that isn't lobar. The physical exam of diffuse rales and rhonchi more suggests an interstitial pneumonia than a true consolidated pneumonia. The absence of pleural effusion also helps a little bit in ruling out any overwhelming Staphylococcal pneumonia.

The patient was placed in a croupette with oxygen mist, started on antibiotics—which ones we are not told—and given intravenous fluids. The following morning she was found to have more abdominal distention and a nasogastric tube yielded 30 cc of fecal material. Most likely, this is just a paralytic ileus, but the possibility of a mechanical obstruction is always present, especially when you get fecal material back from the stomach. I think that the main cause of the distention is that the allergic vasculitis that is appearing in the skin (which is what I think it is) is also affecting the gastrointestinal tract.

What was the first illness in this case? I really am not sure at this moment. It is very hard to get a virus that will cause a simultaneous disease in all four children and a rash, other than measles. The measles incubation period is about 10 days to two weeks. The usual history with measles is that one of the children who is going to school comes home with it and then passes it on to the other children, so that measles occurs maybe 4 days later in one child and a week or two later in another one. It usually does not come on in all four children at one time, so that this is really against measles, if, in fact, that is what happened to these four children. Everything else is consistent with measles: the fact that the rash left after 3 days, that it was hyperpigmented a week to 10 days later, and that child went on to have some further trouble with measles, because pulmonary complications from measles are not uncommon and are the second most common complication after otitis.

The pulmonary complication is usually a secondary bacterial infection and less commonly a so-called "giant cell pneumonia". Many of the children who go on to have giant cell pneumonia or problems from primary measles have either some underlying defect in the immune system or a lymphoreticular disorder. We have nothing in the history, the physical exam or lab data to suggest the child has an underlying disorder, although when any child undergoes a rapid demise such as this, you must think of that as a possibility.

I am going to say that I think the children primarily had measles because there are too many things against the other possibilities. For instance, mycoplasma pneumoniae, as I said, usually does not cause a rash. It occasionally does; it can leave hyperpigmented lesions and can go on exacerbating a week or 10 days later and cause death.

Besides mycoplasma then, what else could we implicate for the first illness? We always think about infectious mononucleosis—10% of infectious monos can cause a papular rash just like this and can be associated mainly with respiratory symptoms, but it is not highly contagious. All four children would not develop it at one time and I would not think it would cause a rash in all four children, so I am just tossing that out as a possibility.

How about the rickettsial diseases? Well, those that do cause a rash do not have respiratory symptoms as a presenting complaint. The one rickettsia that does cause mainly respiratory disease (Q fever) does not cause a rash, so I am going to throw out rickettsial diseases.

Fungal diseases are a possibility. Rarely you can get an overwhelming infection from Histoplasmosis, Coccidiomycosis or Blastomycosis, but usually these have hepatosplenomegaly and other findings, and the x-rays do not really look too much like a fungal infection. So I am left with measles as the primary disease in this child.

Subsequently, what happened to this patient? The possibilities are several: a second viral infection; a continuing measles pneumonia; a secondary bacterial pneumonia (which is the most common respiratory problem after measles); and fourth, as an explanation for the purpura, probably intravascular coagulation or consumptive coagulopathy, although there always is the possibility that the child developed thrombocytopenic purpura secondary to measles.

Disseminated intravascular coagulation has been described after measles, chicken pox, and other viruses. These are usually viruses that cause viremia, because it probably is related to the Schwartzman reaction and needs a viremia to induce the intravascular coagulation.

I would like to just summarize then by saying that I think the child had measles and subsequently developed a consumptive coagulopathy, and that at autopsy, you will see multiple small fibrin deposits in the kidney and in small vessels, and the child will probably have a viral pneumonia.

Pathological Discussion

Dr. Enrique Gerszten: The autopsy was performed 10 hours after death. The only organs that on gross examination showed pathological changes were the lungs (as expected) and the liver. The lungs weighed 500 gm, almost 3 times normal size. They were hyperemic and edematous, even more so in the lower lobes. Section of the lungs showed the parenchyma to contain multiple small, purple-red foci that were felt better than seen and were rubbery in consistency. The bronchi were filled with mucoid and fibrinous material. The mucosa of the large bronchi was markedly congested. The tracheobronchial lymph nodes were enlarged. Lung tissues were taken for culture for bacteria, acid-fast, fungi and virus.

The liver weighed 600 gm (normal 500 gm) and was markedly congested.

Histologically, the liver was markedly congested and the hepatic cells contained many small globules that we interpreted as fat. Infants' and children's livers are very susceptible to this fatty change in hypoxemia and sepsis.

We paid special attention to the heart to see if there was some abnormality, since many viral diseases attack the myocardium, but it was normal.

The kidneys showed some swelling of the parietal cells of Bowman's capsule and some cloudy swelling of the tubules, but nothing specific.

The main changes, as suspected, were in the bronchi and bronchioles. Almost all the blocks of the lung tissue showed these small bronchi and bronchioles to be completely destroyed. One cannot see even the remnants of the epithelium, and one can see an infiltrate from the bronchi going to the adjacent alevolar parenchyma (Fig. 1). The rest of the sections showed pulmonary edema. Here, in a closer view of the bronchi,

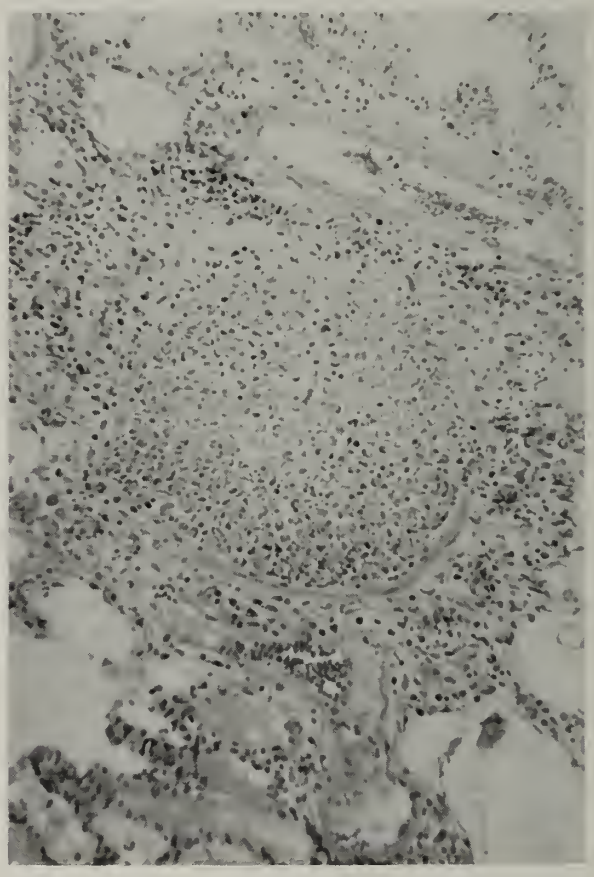


Fig. 1. Bronchiole showing necrosis and inflammatory infiltrate extending into surrounding pulmonary parenchyma. (H & E, x 140)

you cannot recognize the epithelium, you can see that the inflammation is composed of mononuclear cells, with very few polys.

Some of the bronchioles were completely occluded with macrophages, debris, mucus or even hyaline membrane-like material. Hyaline membranes were numerous in other areas. Bacteria were absent on special stains. A characteristic inclusion body was easily

seen in both bronchial and alveolar cells on high magnification, and you can see that the inclusion is intranuclear and has a brick-red color (Fig. 2). The microscopic findings of the inclusion bodies made us confirm the diagnosis of a viral pneumonia. In the meantime, the Virology Laboratory told us that something was growing.

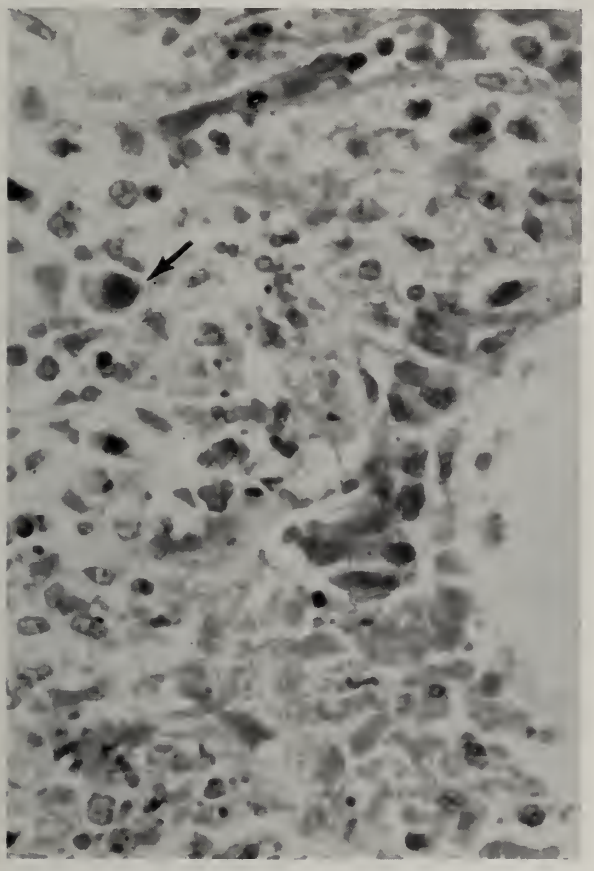


Fig. 2. Peribronchiolar infiltrate showing intranuclear inclusion body in alveolar cell (arrow). (H & E, x 580).

I took the slides to several of my colleagues and everybody agreed to make the diagnosis of viral pneumonia, but nobody pinpointed the etiology because everybody shares with me complete ignorance of the subject.

After a couple of weeks, the Virology Laboratory reported the diagnosis: Adenovirus Type 7. I went back to the literature and I discovered that the lesions that I showed you are specific changes, and from the necropsy material a firm diagnosis can be made on histologic grounds alone.[1]

Dr. Pinkerton,[2] in a seminar on virus infections of the lung in 1962, told the auditorium when he discussed a case of adenovirus pneumonia, "I am sure ten years from now this will be diagnosed just as readily as measles giant cell pneumonia is now. . . What you see depends upon what you are looking for."

Influenza, measles, cytomegalic inclusion disease, adenovirus and varicella have pathognomonic changes that I will show you. These changes should serve to refute the statement often made in text books of pathology and virology that morphology has no diagnostic value in viral diseases except in rabies.

Actually, virus isolation and positive immunologic tests are at times misleading. Morphologic study often shows which one of two or more isolated viruses is actually inflicting the damage.

The most important viruses today are influenza, measles (giant cell pneumonia), cytomegalic inclusion disease, adenovirus and varicella.

This is influenza—you can see the very thick hyaline membrane that is very characteristic of this disease. No inclusion bodies are seen with the light microscope. Hemosiderin-laden macrophages (cardiac failure cells) are commonly seen.

This is measles giant cell pneumonia. It is impossible to miss the diagnosis. Giant cells are seen throughout. A closer view shows the large syncytial cells coming from the alveolar wall and forming these giant cells, in which you can see inclusion bodies in the cytoplasm.

Here is another inclusion disease—cytomegalic inclusion disease. The diagnosis is made by this big halo around the inclusion, the so-called "owl's eye" inclusion. These are seen without difficulty in the nucleus, and more rarely in the cytoplasm. Usually it is associated with immunologic deficiency of some sort. The typical intranuclear inclusion with the halo is also seen in renal tubular cells and in other organs.

This is varicella. It is very easy to make the diagnosis if you look for it—hemorrhage throughout without any reaction in the body. You find inclusions usually in the endothelial cells and in the macrophages.

Here, then, you have the histologic characteristics: in influenza, lack of intranuclear or intracytoplasmic inclusions, with thick hyaline membranes; in measles, giant cells; in cytomegalic inclusion disease, the halo; in varicella, the hemorrhage; and in adenovirus, the severe bronchiolitis.

Let's speak for a few second about the adenoviruses. The adenovirus was first recorded to my knowledge in 1953. Today, they are known to produce diseases in humans and certain other species. The human adenovirus has more than 31 serotypes and one subtype.[3] The important types include Type 8 (pharyngeal and conjunctival inflammation and fever) and Types 3 and 7 (acute pulmonary infections). It has been reported lately that Types 3 and 7 can also produce a rash resembling measles. Remember that Type 7 was cultured in today's case.

The usual symptomatology is not striking and is like any other upper respiratory infection: cough, fever, sore throat and rhinorrhea. The typical physical findings—pharyngitis, rales and rhonchi—were also seen in our patient.

There is a possibility that the diagnosis of adenovirus pneumonia can be made by sputum cytology. Smears were taken during the autopsy of the purulent material in the main bronchi. Dr. Frable and I went back to the smears, and although they were improperly fixed for cytological studies, they showed blurred intranuclear inclusions. In future suspected cases, smears should be sent to the cytology lab for a search for inclusions.

The largest series of adenovirus recovered from respiratory infections was reported by the Mayo Clinic during a 6 year period—300 isolations[4]: The majority of the isolates were from children with upper respiratory infections, but less than 10% of the cases were Type 7. The lowest isolation rate occurred in the winter, but in only 10% of the cases was the virus isolated when the disease was more than five days old. So far, nobody has seen inclusions outside the lungs, although in a few autopsy cases the adenovirus was isolated from other tissues (liver and spleen), probably due to the viremia and not a disease process in those organs.

I calculate that until today there are about 100 fatal cases reported. One of the most extensive investigations of fatal cases of primary viral pneumonia in children was that undertaken by Hsuing Chih-Ch'uan in Peking.[5] It is a very good article, probably because it was written before the Mao Cultural Revolution. He was able to isolate adenovirus in 40 cases, or 44% of 91 infants and children dying from primary viral pneumonia. Of the 40 cases, 24 were Type 7, and 14 were Type 3.

The Virginia State Lab isolated Adenovirus in only one case in 1968 and two in 1969—these were two Type 7 and one Type 3.

There is only one article dealing with serious sequelae in children with evidence of adenovirus infection,[6] but it was Type 21. Fifty percent of those children who survived an epidemic in New Zealand in 1965 had obliterative bronchiolitis, and 20% were left with proven bronchiectasis.

In summary, I presented to you a case of an acute viral pneumonitis due to Adenovirus Type 7, with its typical changes produced in the lung.

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Correspondence

Nursing Today.

To the Editor:

I feel compelled to respond to your guest editorial written in your September, 1969, issue of the Virginia Medical Monthly. I hold a baccalaureate degree in nursing, and I am proud of it.

Mrs. Snellings, the editor, I feel is being unfair in her judgment of the baccalaureate nurses, since she has not, to my knowledge or those I have questioned, ever worked with one in her department. She also states that only one of five at Mary Washington Hospital are employed in beside nursing and yet I know personally of six that are at the bedside of the patient.

It is also my feeling that there is far more to being a good nurse than the presence or absence of B.S. following your R.N. A good nurse is "born into the profession" so to speak. Without dedication and "that special personality," among other attributes, no amount of education will make a good nurse. Perhaps those degree nurses that Mrs. Snellings has been told about would not have made good diploma graduates or L.P.N's.

Since the nursing profession needs someone to train new nurses and to lead the profession, many of the baccalaureate nurses are in administrative and instructive positions. Yet many of these nurses would prefer closer contact with the patient, if the demand for their knowledge were not so great.

The emphasis of the baccalaureate program is entirely different from that of the diploma program, and yet the baccalaureate program gives young women a better background upon which to build. The baccalaureate graduate may leave school with unrefined skills, but as experience is added these skills become refined and the concept of *total patient care* emerges.

All too often those who criticize are those who have obtained their experience, and neglect to allow for the mistakes that all new graduates make. Many of our nurses who do not see the need for our baccalaureate programs think that baccalaureate program graduates, regardless of their age or experience, are entitled to *no* mistakes just because "they hold a degree and are supposed to know everything."

Regardless of the degree held or our position in nursing, I think our main objective is to work *together* for the betterment of the patient. To this end we should all rededicate our lives.

Sincerely,

(Mrs.) Carolyn S. Doggett, R.N., B.S.N.

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Cancer Trends . . . .

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The Importance of Routine Sigmoidoscopic Examination in Asymptomatic Patients

The importance of routine sigmoidoscopy cannot be overemphasized in the prevention of increased mortality and morbidity from colo-rectal carcinoma. In spite of the fact that approximately 70 percent of significant lesions are within reach of the sigmoidoscope, only 14 percent of physicians routinely carry out this procedure on asymptomatic patients as part of a complete physical examination.[1] Most physicians include routine chest x-ray and CBC as part of the complete physical examination in an attempt to uncover such diseases as bronchogenic carcinoma or leukemia, which, in fact, have a rather poor prognosis. In contrast to these procedures, the routine sigmoidoscopic examination uncovers common pathology which often has a remarkably favorable prognosis.

Incidence

Colo-rectal carcinoma is a common disease. Recent statistics have shown it to be a major killer, second only to lung cancer, accounting for 15 percent of all cancers in the United States.[2] It has been estimated that in 1967 44,000 patients died of colorectal carcinoma and during this same period 77,000 new cases were uncovered. Possibly two-thirds of these deaths could have been prevented if routine sigmoidoscopic examinations were carried out on all patients over the age of 40.[3]

The belief of many physicians that digital examination will uncover 50 percent of polyps and carcinomas of the rectosigmoid area is incorrect. In Crumpacker's series only three percent of polyps found by sigmoidoscopic examination were palpated digitally.[4] At the Strang Clinic 58 colo-rectal carcinomas were found in 26,000 asymptomatic patients by sigmoidoscopic examination, but only 9.5 per cent of these lesions were palpated digitally.[5]

Studies reveal that benign polypoid lesions occur from 4.3 percent to 12.3 percent in asymptomatic patients undergoing routine sigmoidoscopic testing. The incidence of malignant lesions in the same studies ranges from 0.0 percent to 8.3 percent (See Table.)

INCIDENCE OF BENIGN AND MALIGNANT POLYPOID LESIONS DIAGNOSED ON ROUTINE SIGMOIDOSCOPIC EXAMINATIONS

Author	Total Patients Examined	Percent of Benign Lesions	Percent of Malignant Lesions
Browne and McHardy[6]	200	4.8	1.5
Burnikel et al.[7]	5,072	9.9	2.6
Cameron et al.[8]	1,886	6.0	1.2
Christianson et al.[9]	2,226	12.3	0.13
Creek et al.[10]	3,321	7.1	0.69
Crumpacker et al.[4]	5,178	4.3	0.8
Enquist et al.[11]	7,608	11.5	1.0
Grant, R. N.[1]	2,924	5.4	3.3
Hertz et al.[5]	26,126	—	0.45
Knoernschild et al.[12]	18,120	7.3	0.5
Linn et al.[13]	1,405	5.8	0.14
Mandel A.[14]	1,000	6.2	0.2
Mayo Clinic[15]	2,452	7.5	0.0
Miller, C. J.[16]	209	5.4	2.3
Molofsky and Hayashi[17]	7,400	6.4	0.04
Ochsner et al.[18]	2,000	9.1	2.1
Portes and Majarakis[19]	50,000	7.9	8.3
Rasgon	1,900	6.2	0.8
Shallenberger[20]	4,500	10.1	2.6
Smith et al.[21]	1,000	6.2	0.81
Steele and Brown[22]	1,500	5.6	0.33
TOTAL	146,027	6.75	1.42

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Few of these men have symptoms. Even so, all are capable of perpetuating the infection and rendering treatment of a woman alone futile.

Only a systemically active medication like Flagyl is capable of reaching the hidden reservoirs of infection in the genitourinary tracts of both men and women.

Only Flagyl has been able to achieve rates of cure consistently above 90 per cent and often up to 100 per cent in trichomonal infections in both men and women.

Indications: For the treatment of trichomoniasis in both male and female patients and the sexual partners of patients with a recurrence of the infection provided trichomonads have been demonstrated by wet smear or culture.

Contraindications: Evidence of or a history of blood dyscrasia, active organic disease of the central nervous system and the first trimester of pregnancy.

Warnings: Use with discretion during the second and third trimesters of pregnancy and restrict to patients not cured by topical measures. Flagyl (metronidazole) is secreted in the breast milk of nursing mothers. It is not known whether this can be injurious to the newborn.

Precautions: Mild leukopenia has been reported during Flagyl use; total and differential leukocyte counts are recommended before and after treatment with the drug, especially if a second course is necessary. Avoid alcoholic beverages during Flagyl therapy because abdominal cramps, vomiting and flushing may occur. Discontinue Flagyl promptly if abnormal neurologic signs occur. There is no accepted proof that Flagyl is effective against other organisms and it should not be used in the treatment of other conditions. Exacerbation of moniliasis may occur.

Adverse Reactions: Nausea, headache, anorexia, vomiting, diarrhea, epigastric distress, abdominal cramping, constipation, a metallic, sharp and unpleasant taste, furry or sore tongue, glossitis and stomatitis possibly associated with a sudden overgrowth of *Monilia,* exacerbation of vaginal moniliasis, an occasional reversible moderate leukopenia, dizziness, vertigo, drowsiness, incoordination and ataxia, numbness or paresthesia of an extremity, fleeting joint pains, confusion, irritability, depression, insomnia, mild erythematous eruptions, "weakness," urticaria, flushing, dryness of the mouth, vagina or vulva, vaginal burning, pruritus, dysuria, cystitis, a sense of pelvic pressure, dyspareunia, fever, polyuria, incontinence, decrease of libido, nasal congestion, proctitis, pyuria and darkened urine have occurred in patients receiving the drug. Patients receiving Flagyl may experience abdominal distress, nausea, vomiting or headache if alcoholic beverages are consumed. The taste of alcoholic beverages may also be modified.

Dosage and Administration: *In the Female.* One 250-mg. tablet orally three times daily for ten days. Courses may be repeated if required in especially stubborn cases; in such patients an interval of four to six weeks between courses and total and differential leukocyte counts before, during and after treatment are recommended. Vaginal inserts of 500 mg. are available for use, particularly in stubborn cases. *When the vaginal inserts are used* one 500-mg. insert is placed high in the vaginal vault each day for ten days and the oral dosage is reduced to two 250-mg. tablets daily during the ten-day course of treatment. Do not use the vaginal inserts as the sole form of therapy. *In the Male.* Prescribe Flagyl only when trichomonads are demonstrated in the urogenital tract, one 250-mg. tablet two times daily for ten days. Flagyl should be taken by both partners over the same ten-day period when it is prescribed for the male in conjunction with the treatment of his female partner.

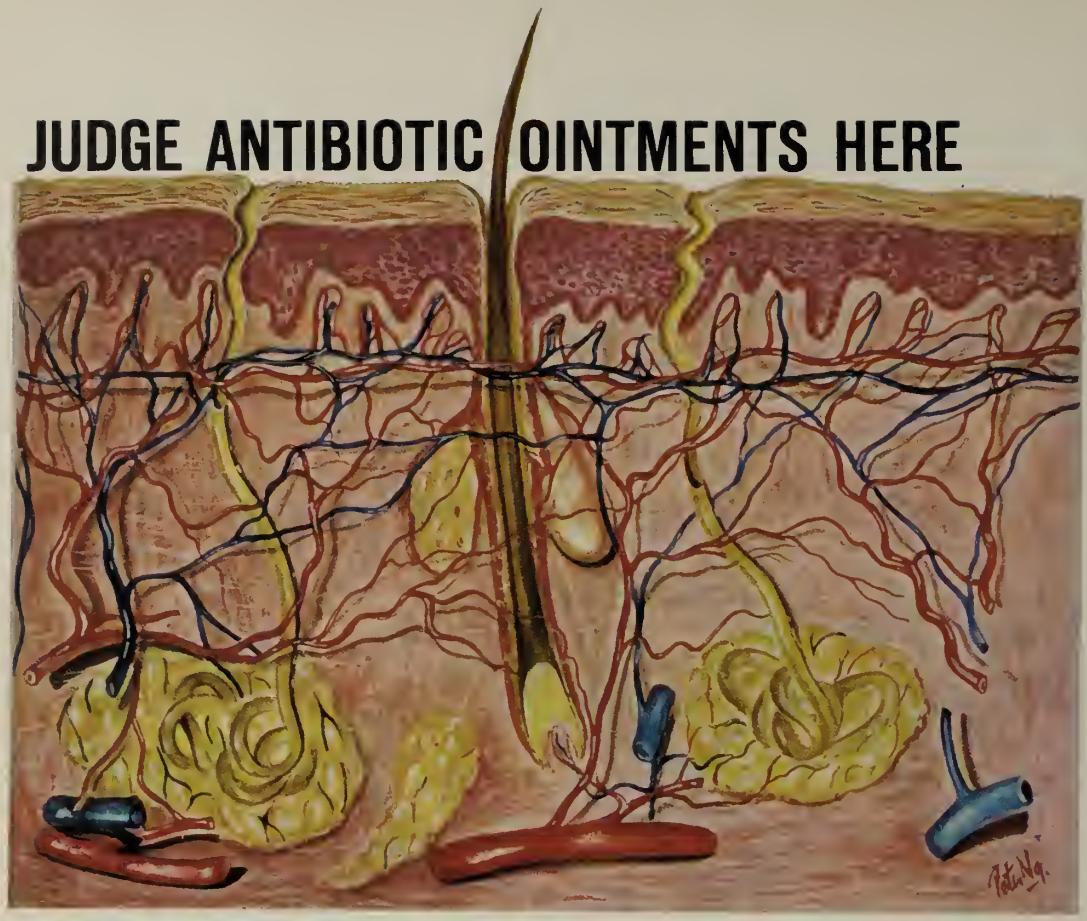
Dosage Forms: Oral tablets . . . 250 mg.
Vaginal inserts . . 500 mg.

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Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

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Our study paralleled that of Rider who found on reexamination of patients with previous polypoid lesions that the rate of recurrence of new polyps was approximately 10 percent.[23] Our study also indicated that patients with multiple polypoid lesions experienced a recurrence rate of over 50 percent. It is for this reason that patients with a finding of a single polyp are reexamined every six months. It is our opinion that patients with negative findings can be examined every two years without a high risk of advanced cancer occurring within this time. This is borne out by the study of Welin, et al., who reported the growth rates of cancer of the colon and rectum to be .003 to .025 mm. per day with a doubling time of 1,155 —138 days.[24] This slow growth suggests that sigmoidoscopic examinations carried out every two years are adequate in the detection of most curable cancers involving the lower colon and rectum.

Barium enema x-rays should be carried out on all patients manifesting polypoid lesions on routine sigmoidoscopic examination, because in about 5 percent additional polypoid lesions will be found at a higher level of the colon. Cancer at the same level will occur in about one third of one percent.[11] In our study barium enemas in two patients with polypoid lesions found on sigmoidoscopic examination revealed an adenocarcinoma in one and a villus adenoma in the other; each lesion was above the reach of the scope. The patient with adenocarcinoma had undergone barium enema x-ray studies 18 months previously because of diverticulitis and the lesion was not present at that time.

The controversy of benign adenomatous polyps being precursors of colo-rectal carcinoma remains unsettled. We believe that all polypoid lesions should be removed locally, because reexamination of large groups of asymptomatic patients revealed a much lower incidence of cancer on a second examination when prior removal of all polypoid lesions had been carried out. Rider reported that on a second examination the presence of carcinoma was less than one fourth of the incidence found in the original study.[2-5,23]

At the Minnesota Cancer Detection Center reexamination of 55,000 patients from 1948 to 1966 revealed an incidence of nine new adenocarcinomas, all without metastasis. Statistically 32 adenocarcinomas would have been expected to be found. This would suggest that removal of all polypoid lesions on original examination prevented the occurrence of many new malignant lesions.[2] It is unimportant whether small adenomatous polyps might be premalignant or whether carcinomas start "de novo" so long as routine removal is effective in reducing the incidence of new carcinomas.

The detection rate for cancer by sigmoidoscopic examination as an initial examination for men was greater than that for the Papanicolaou smear for cervical cancer as an initial examination for women.[23]

Shimkin has estimated that, according to life expectancy (based on 1959 statistics) 13 out of 1,000 men and 10 out of 1,000 women will probably develop rectal cancer. Perhaps mortality in these individuals could be prevented if all patients over the age of 40 would undergo periodic sigmoidoscopic examination.[25]

Drexler reported a higher incidence of multiple polypoid lesions in patients who were heavy smokers, and also in patients who had cardiovascular disease.[26]

Prognosis

It is indeed disheartening when a patient presents himself with either a small symptomatic carcinoma or a large asymptomatic carcinoma of the rectosigmoid area within reach of the proctosigmoidoscope. The prognosis is markedly better when small asymptomatic rectosigmoid lesions are detected. Whereas symptomatic carcinoma of the recto-colon area has a relatively good prognosis, and its early detection insures a better cure rate, one half of patients with

symptomatic carcinoma are beyond cure even with surgical treatment.[27]

Sixty-eight of seventy-nine patients with symptomatic rectal carcinoma were followed at the Southern California Permanente Medical Group, Kaiser Foundation Hospital in Los Angeles over a five-year period. Forty-three of these patients had only local involvement of the bowel wall, and twenty-five revealed spread to lymph nodes. Seventy-seven percent of the patients with local involvement were living and asymptomatic five years after surgical treatment, in contrast to 20 percent with metastatic spread.[28]

A study by Hertz, et al. revealed that in 58 patients with asymptomatic carcinoma of the colon only 15 percent had lymph node metastasis. This group of 58 patients had an 88 percent five-year survival rate. In contrast, patients with symptomatic colon carcinoma had only a 50 per cent survival rate.[5] This experience is similar to that of the Minnesota Detection Clinic. Seventy-five percent (9 of 12) of patients with asymptomatic rectal cancers had a five-year cure in contrast to 1 of 5 symptomatic colon cancers and 3 of 6 for symptomatic rectal cancers.[29] Dukes divided colo-rectal carcinoma into four stages: Stage A (limited to rectal wall), Stage B (through rectal wall), Stage C (with lymph node involvement), Stage D (wide-spread metastases). Stage A patients had an 81.2 percent five-year survival rate, Stage B 64 percent, Stage C 27 percent, and Stage D less than 5 percent.[30]

During a four-year period 240 patients with symptomatic carcinoma of the colon and rectum admitted to Georgia Baptist Hospital revealed that Stage A had an 81 percent five-year survival rate, Stage B 59 percent, Stage C 21 percent, and Stage D 6 percent. Seventy-three percent of all of these tumors were within reach of the sigmoidoscope.[31]

Method

After a routine complete physical examination on patients over the age of 40, we present our patients with a brief explanation of the importance and value of the sigmoidoscopic examination as a cancer prevention procedure; over 95 percent of our patients have accepted the examination. The patients are given written instructions regarding preparation with Fleets Enema and are scheduled for a 15-minute appointment (which we have found is ample) arranged at a future date. The proctoscope, aspirator, and biopsy instruments are housed on a movable cart, which not only saves time, but also permits any examining room to be utilized as a proctoscopic room. The Sims position is used because it permits patient comfort and relaxation; we do not use the knee-chest or jack-knife position. When the patient is not completely prepared, a Fleets Enema solution, used through the sigmoidoscope with use of an aspirator, is of great help.

Results

Nineteen-hundred proctosigmoidoscopic examinations, carried out on asymptomatic patients over the age of 40 during an 8-year period, revealed the presence of benign polypoid lesions in 6.2 percent of the total group. Forty-nine percent of the benign polypoid lesions were reported as adenomatous polyps, and 51 percent were reported as rectal mucosal tags. Eight adenocarcinomas were detected, and four adenomatous polyps with moderate to severe atypism were encountered. Two patients were found to have villus adenomas (one containing a carcinoma in situ and the other being part of a multiple lesion). Villus adenomas should be considered potentially malignant because more than 50 percent of these lesions proved to be cancers. There is a strong tendency for benign lesions to recur.[32] One carcinoid tumor located in the rectal area was encountered in the study.

Comment

It has been reported that polypoid lesions under one cm. in size rarely reveal malignant change (less than one percent); however, our present study suggests that all lesions, regardless of size, should be biopsied and studied histologically whenever possible.[33] In one patient (45-year-old Caucasian female), two grossly identical polypoid lesions measuring 5 mm. in diameter were excised and studied histologically: one specimen was reported as adenocarcinoma and the other as a benign adenoma. It is evident from the above experience that one cannot differentiate small malignant lesions from small benign lesions on the basis of their gross appearance or size.

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Comment

In a recent discussion in this column, Dr. Robert Terrell stressed the need for consideration of the diagnosis of carcinoma of the lower bowel in all patients with any symptoms suggestive of colorectal disease. We thought it appropriate to add further emphasis to the importance of early detection of colorectal lesions by reprinting this excellent contribution by Dr. Rasgon. The fact that colorectal cancer is the single most common cancer in our population today seems adequate justification for this attempt at reinforcement of these concepts.

Some years ago many of us behaved as if all polyps of the colon and rectum were destined to become carcinoma if undetected and untreated. Reports of polyps in a significant percentage of our population who were over 40 years of age led to great concern, and routine sigmoidoscopy of all asymptomatic patients in this age group was emphasized and readily accepted. As the benign course of *most* adenomatous polyps was more fully appreciated, the pendulum then seemed to swing too far in the other direction. Too small a proportion of physicians now fully appreciate the value of sigmoidoscopy as part of the physical examination of the asymptomatic patient. Hopefully, the data advanced by Dr. Rasgon will impress you that this is an important part of the general physical examination.

Dr. Rasgon points out physician acceptance of the complete blood count and chest x-ray as appropriate screening tests for our patient population. To this might be added the Pap smear since this test has significantly altered the pattern of incidence and survival of carcinoma of the cervix in this country. Several physicians here in Virginia who routinely employ both Pap smears and sigmoidoscopy as part of routine examination have stressed the point that they found a great number of patients with significant findings in the colon and rectum for every patient who proved to have an abnormal Pap smear. This is not meant to minimize the important role of Pap smears in detecting early lesions of the cervix, but it does establish the fact that routine sigmoidoscopy has a high yield. This procedure also helps to make every doctor's office a legitimate cancer detection center.

The Editors

Diagnostic Laboratory Medicine....

H. FERRELL, M.D.

Hemoglobinopathies—A Review of Nomenclature

Since 1949 when Pauling used electrophoretic mobility to demonstrate the physical-chemical differences between normal hemoglobin and that found in sickle cell disease, electrophoresis has been an important tool in the detection and study of abnormal hemoglobin and in the diagnosis of thalassemias. Clinically, manifestations of hemoglobinopathies often overlap and electrophoresis helps to define various types and to allow more accurate diagnoses. Many hemoglobin variants, discovered through surveys utilizing electrophoresis together with polypeptide mapping, are not associated with disease. Through such studies, and others, the structure of normal hemoglobin was established.

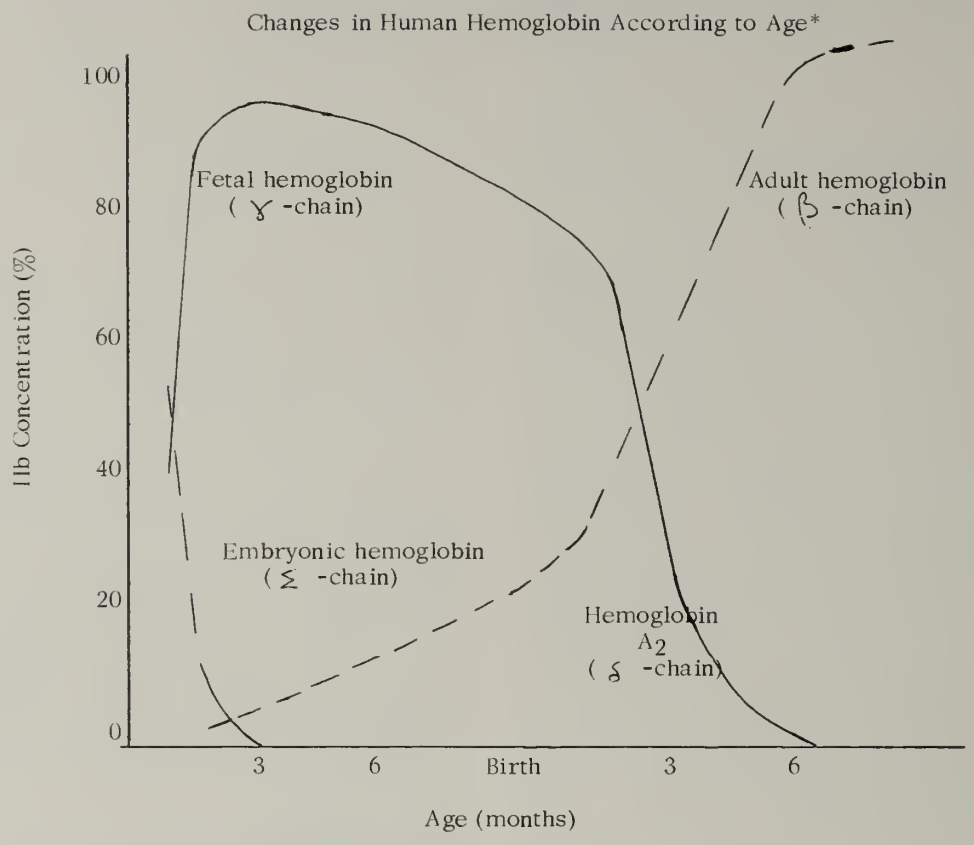
All hemoglobin molecules consist of a heme group (ferroprotoporphyrin) and a globin portion. The former is identical in the various types of hemoglobin and a review of its structure will not be included. The globin portion consists of four polypeptide chains, each of which attaches to a heme group. These have been designated α, β, γ, and δ. The α chains contain 141 amino acids and the β, γ, and δ chains each contains 146 amino acids, in different sequence. The amino acid sequence for a particular chain type is constant and genetically controlled. By definition, hemoglobinopathies arise when this ordered sequence is altered in one or more of the polypeptide chains. In the more common hemoglobinopathies the structural change is usually due to substitution of a single amino acid within one of the polypeptide groups. The normal hemoglobins, A, F, and A_2, contain the following combinations of polypeptide chains:

HbA—2α, 2β ($\alpha_2\beta_2$)
HbF—2α, 2γ ($\alpha_2\gamma_2$)
HbA_2—2α, 2δ ($\alpha_2\delta_2$)

HbA is the major adult hemoglobin. At birth HbA is about 20% of the total hemoglobin, the majority being HbF, or fetal hemoglobin (see Figure I). At four months of age 90-95% is HbA, while the remainder is mostly HbF. In the normal adult, HbF is less than 2% and HbA_2, which can be detected soon after birth, reaches levels between 1.5-3.5%. The remainder is HbA.[1] Embryonic hemoglobins, detected before three months of gestational age, contain polypeptide chain Σ, which is different from α, β, γ, or δ. There are two types, Hb-Gower-1 (Σ_4) and Hb-Gower-2 ($\alpha_2\Sigma_2$). As γ chains are produced the embryonic hemoglobin disappears.

Abnormal hemoglobins are given alphabetical letters in sequence as they are discovered: A is reserved for normal adult hemoglobin, F for fetal hemoglobin, and S for the sickle-cell type. When two or more hemoglobins migrate together electrophoretically, then a subscript is added to the letter indicating the geographical location at which that variant was first isolated. An example would be HbG—GALVESTON, HbG—CHINESE, and HbG—ACCRA. If the polypeptide chain that contains the abnormality is known, then it is indicated by a superscript. For example, the abnormality in HbS has been found to reside in the β chains, and the notation would be $\alpha_2\beta_2^S$. If, in addition, to knowing what chain is involved, one knows what chemical structural changes have been made and at what point along the polypeptide chain, then a more specific superscript is written giving the number along the chain and the amino acid substitution. For example, HbS differs from HbA in

Figure I



*Modified from Huehns and Shooter, 1965.

TABLE I

AMINO ACID ABNORMALITIES IN SOME HEMOGLOBIN VARIANTS*

Hemoglobin	Abnormal Chain	Site of Substitute	Normal Amino Acid	Replacing Amino Acid
S	β	6	Glu	Val
C	β	6	Glu	Lys
D—PUNJAB	β	121	Glu	$GluNH_2$
E	β	26	Glu	Lys
G—GALVESTON	γ	6	Glu	Lys
G—CHINESE	α	30	Glu	$GluNH_2$
G—ACCRA	β	79	Asp	$AspNH_2$
J—BALTIMORE	β	16	Gly	Asp
J—OXFORD	α	15	Gly	Asp
M—BOSTON	α	58	His	Tyr
M—MILWAUKEE	β	67	Val	Glu
ZURICH	β	63	His	Arg

*Modified from A. F. King and J. B. Henry: Hemoglobin electrophoresis. Clinical pathology correlations of hemoglobinopathies and thalassemias. New York State J. Med., 67: 1275, 1967.

Nomenclature: Gu=glumatic acid, Val=valine, Lys=lysine, $GluNH_2$=glutamine, Asp=asparagine, Gly=glycine, His=histidine, Try=tyrosine, and Arg=arginine.

having valine substituted for glutamic acid at the number 6 position from the N-terminal along one of the chains, and this is written HbS= $\alpha_2\beta_2{}^{6Val}$.

Table I shows the nomenclature for some hemoglobin variants.

Amino acid substitution changes most often involve the α or β chains and are referred to as α-hemoglobinopathies and β-hemoglobinopathies. Thalassemia is characterized by normal polypeptide chains, however, the rate of production of one type of chain (α or β) is decreased. The most common type is β-thalassemia and involves a decrease in β chain production, thus a low HbA ($\alpha_2\beta_2$). Because δ and γ chains are normal, HbF ($\alpha_2\gamma_2$) and HbA_2 ($\alpha_2\delta_2$) will be increased.

Since the amino acid sequence is genetically controlled, hemoglobinopathies may be homozygous or heterozygous for an ab-

normality on a polypeptide chain. In sickle-cell trait (the heterozygous form), the abnormality involves the β chain, and since a person with the trait is considered heterozygous then some of the β chains produced are normal. Therefore, one expects to find HbA ($\alpha_2\beta_2$) as well as HbS ($\alpha_2\beta_2^S$). Interestingly, the normal HbA usually exceeds the quantity of abnormal hemoglobin, possibly because of either slower production of abnormal β chain or because of selective early destruction of RBC's containing high concentrations of abnormal hemoglobin. On the other hand, in sickle-cell disease, which is considered homozygous for the abnormality, all β chains produced are abnormal and no HbA ($\alpha_2\beta_2$) is formed, only HbSS ($\alpha_2\beta_2^S$), along with HbF and HbA_2.

Another important beta-hemoglobinopathy is HbC ($\alpha_2\beta_2^{6Lys}$). It is important to remember that in the heterozygous beta-hemoglobinopathies, the normal HbA will exceed the abnormal hemoglobin. In conditions of homozygous beta-hemoglobinopathies (example HbSS or HbCC), where both allelic genes for β chains are abnormal, as well as in conditions involving double heterozygotes for β chain abnormalities (example HbSC), where two different abnormal β chains are produced, there will be no HbA ($\alpha_2\beta_2$) produced. In cases of double heterozygotes for β-thalassemia and for beta-hemoglobinopathy (example HbS thalassemia) the quantity of abnormal hemoglobin will exceed the normal HbA because of the effect of the former on the rate of normal β chains production. Alpha hemoglobinopathies are rare with only heterozygous forms reported. It is postulated that the homozygous states may be lethal.[2] Examples of alpha-hemoglobinopathies are HbI, HbQ, HbD—CYPRUS, HbD—NORFOLK, HbM—BOSTON, and HbM—IWATE. The latter two belong to the hemoglobin M group of hemoglobinopathies which are a group of abnormal hemoglobins (some are α and some are β chain abnormalities) associated with methemoglobinemia and cyanosis. In these cases, reversible binding of oxygen by the heme group is prevented because of an amino acid substitution on the polypeptide chain near the heme group, resulting in an oxidized stable heme complex. In patients with hemoglobin M disease of α chain abnormalities, cyanosis is present at birth. However, if the disease is due to a defect of the β chain, then cyanosis begins to develop at 2-4 months, at which time fetal hemoglobin should be replaced by adult hemoglobin.

Two other abnormal hemoglobins associated with abnormal heme function are Hb—CHESAPEAKE and Hb—KANSAS. The first is an α hemoglobinopathy with a hemoglobin which has a high affinity for oxygen. The accompanying mild polycythemia is attributed to the differential in affinity for oxygen of the abnormal over the normal hemoglobin. The second, originally described in a Caucasian boy, has low affinity for oxygen with clinical features including hypoxia from infancy and reduced oxygen saturation.

For separation of hemoglobins by electrophoresis, one may use paper, starch block, agar gel or cellulose acetate. Recent authors prefer cellulose acetate for routine hemoglobin electrophoresis.[4,5,6] It offers convenience, good separation, and ease of quantitation after clearing, either by densitometry or elution and spectrophotometry. The cellulose acetate strip may be kept as a permanent record if quantitated by densitometry. For the actual techniques and procedures, the reader is referred to two methods described in references 4 and 6. Both of these give good separation of HbA_2, which is important in diagnosing thalassemia syndromes.

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(*Continued on page 514*)

Mental Health . . . .

ARTHUR CENTOR, Ph.D.

Current Status of Licensure of Psychologists in Virginia

Beginning July 1, 1966, psychologists offering their services to the public for a fee were required to possess a license either as a psychologist or as a clinical psychologist. An article was published soon thereafter by this author describing the essential features of the law and the history leading up to it.[1]

Four years have gone by and the passage of time has not, apparently, made any appreciable difference in the continuing confusion in the minds of the professionals referring to psychologists as to who can do what to whom and where.

A rather simplified way of summarizing the law in Virginia is: If his work is not for a governmental agency or accredited college or university, the psychologist must be licensed.

This paper is based on the best information currently available. However, the author assumes no responsibility for the legal validity or any of his statements or opinions; the Virginia Board of Psychologists Examiners and the Virginia Board of Medical Examiners have the authority to determine and interpret what is permissible and what would be in violation of the law. The examples presented here represent typical problems confronting professionals in their dealings with psychologists.

Example 1—A private psychiatric hospital wishes to employ an unlicensed individual to perform psychological services and to be called a psychologist. . . Since the hospital is not a governmental institution, this individual must be licensed as a psychologist or clinical psychologist.

Example 2—A private psychiatric hospital wishes to employ an unlicensed individual to serve as a technical assistant to administer psychological tests, but not to perform psychotherapy, under the direct supervision of a licensed psychologist or clinical psychologist. . . They may employ such an individual if he has successfully completed thirty semester hours of college training in psychology and holds a baccalaureate degree, but he is not to be called a psychologist. Responsibility for the psychological services performed must be assumed by the licensed psychologist or clinical psychologist. The technical assistant may not perform psychotherapy.

Example 3—A psychiatrist in private practice wishes to employ a technical assistant to perform psychological services, not including psychotherapy, under his own supervision and responsibility. . . The supervision of technical assistants performing psychological services offered to the public for a fee may only be assumed by a licensed psychologist or clinical psychologist.

Example 4—A psychiatrist in private practice wishes to employ an unlicensed psychologist but otherwise apparently well qualified. Billing of fees for his services would be sent out by the psychiatrist and a salary paid to the unlicensed psychologist. . . This, however, is similar to the example of the private psychiatric hospital in *Example 1.* Though the unlicensed psychologist is not offering his services to the public for a fee directly, a fee is being charged for his services, and, because the intent of the statutes is to protect the public, psychological services performed in this case by an un-

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Approved for publication by Commissioner, Department of Mental Hygiene and Hospitals.

licensed psychologist would be unlawful. The rationale in all such cases is that if the individual is qualified he may apply for and obtain a license, or, if newly arrived to the State, apply for a temporary permit to practice until the next examination date.

Example 5—A county wishes to employ an individual to perform psychological services for the courts in the county but the individual they would like to hire is not licensed... Because the individual would be an employee of a governmental body, he may perform psychological services and be called a psychologist without being licensed. The exemption for governmental bodies extends to Federal, State, and local governments.

Example 6—A county school wishes to employ an unlicensed individual to perform psychological services in the school and to be called a school psychologist, but on a part-time basis. . . The school may do this because he is considered an employee whether he works a full week or only part-time.

Example 7—A State mental hygiene clinic wishes to employ an unlicensed individual on an irregular basis as the need arises to perform psychological services and to be called a psychologist... The clinic may do this because it is a State agency and, therefore, exempt from employing only licensed psychologists; the utilization of the services of this individual, even though on an irregular basis is considered employment.

Example 8—A group organizes itself and takes the name of the "College of Human Learning" and wishes to employ an unlicensed individual to be called a psychologist and offer his services to the public for a fee . . . This individual would not be exempt because the statutes specify that the college or university be accredited by a regional accredited agency approved by the State Board of Education. (2, section (1)).

Example 9—An accredited university employs an unlicensed individual, calls him a psychologist and, as part of his employment, requires him to perform psychological services for students and non-students in a psychological center with the fees going to the university... Such activities and services and the use of the title are exempt by statute and the individual need not be licensed.

Example 10—The individual mentioned in the example above wishes to perform the same psychological services for which he is exempted but on his own time and to collect the fees for himself. . . This activity would be unlawful because the exemption from the licensing requirement is only for the activities and services of, or use of his official title, by an individual within the scope of his employment. In this example, he is not performing services as part of his employment but for himself and would not be exempt.

Example 11—A registered social worker offers his services as a psychologist to the public for a fee but states clearly that he is a social worker and does not imply that he is a psychologist. . . This individual may carry on activities in the course of practice of a recognized business or profession and would not be violating the law.

Especially confusing to the public and professionals is the difference between a licensed psychologist and licensed clinical psychologist. Time has not been of much help in clarifying the uncertainty. Apparently, the licensed psychologist may engage in activities and perform services that are in no way differentiable from the activities and services of a licensed clinical psychologist. One would think that the requirement of one year of supervised experience for the licensing of the clinical psychologist would indicate that his training is superior. This would ordinarily be true except that there are some licensed psychologists, who, though eminently qualified to receive the license as a clinical psychologist, do not choose to do so because of their opposition to being licensed by the Board of Medical Examiners. It should be pointed out that except for the

stated difference in supervised experience the essential difference between the two is that the licensed psychologist is examined by the Virginia Board of Psychologist Examiners and is issued a license by that Board whereas the licensed clinical psychologist is examined by the same Board but the license is issued by the State Board of Medical Examiners. Separate rosters are kept: that of the licensed psychologist is issued by the Department of Professional and Occupational Registration and that of clinical psychologists is included in the roster of the Virginia Board of Medical Examiners which contains the listing of licensed physicians and others licensed by this Board. During the "grand-fathering" period, sub-doctoral level psychologists were licensed in both groups. Since 1966, however, only doctorate level psychologists may be newly licensed.

The Statutes of Virginia, in recent legislation have recognized the professional competence of psychologists by including them with physicians eligible to sign commitment papers or receive a fee as an expert witness. In the case of someone claiming to have a mental injury or condition as a result of activities or negligence of another party, the one sued may require such an examination, at his expense, by a physician or psychologist. But the statutes recognize only the licensed clinical psychologist and the licensed psychologist would not be considered legally qualified to perform the services mentioned for the courts.

As confusing as this licensing of psychologists in Virginia must seem, in practice there has been very little difficulty in implementing it.

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Division of Clinical Pathology
Medical College of Virginia
Health Sciences Division
Virginia Commonwealth University
Richmond, Virginia

Medicare (Part B)....

CURTIS J. KELLY, J.D.
Administrator, Medicare
Richmond, Virginia

Medicare Claim Review

Information pertaining to the first exclusion in the Medicare Act is included below. For those interested the nearest Social Security Office has complete instructions available for inspection.

Expenses for items or services which are not reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member are excluded from coverage under both Part A and Part B of the program. Carriers have the authority and responsibility to determine, in a given case, whether a claim is for a covered service and to deny claims for noncovered or excluded items or services. In addition, carriers are to assist in the application of safeguards against unnecessary utilization of services furnished eligible individuals. In carrying out it responsibilities, the carrier must take the necessary steps to reconcile any inconsistencies encountered in its bill review.

Carriers also have the responsibility of determining the reasonable charge for covered services and the authority to determine the amount payable for Part B services. Our certification that payment is proper should be based upon the data on the billing form and any attachments, as well as additional documentation or supportive information which is required to resolve questions arising from its bill review function. (Reference: Part B Manual, Section 6301)

Carriers clearly have responsibility for evaluating the propriety of care provided to Medicare beneficiaries, but such activity must not interfere with the practice of medicine. Practicing physicians establish the "customary and prevailing" patterns of charges and patterns of care. Carriers are expected to identify Medicare claims in which the charge or care is unusual and Medicare files must contain valid evidence to justify payment for the unusual care or charge. When Medicare claim personnel are in doubt about the explanation for unusual treatment the following consultative resources are utilized: (1) Medicare Society Review Committee, (2) Facility Utilization Review Committee when in-patient care is in question, (3) a local impartial practicing physician consultant, (4) a physician in our Home Office Medical Department.

Before sending a file to the Medical Society for review, we endeavor to obtain all the information that must be known before a determination can be made as to the reasonableness and necessity for treatments, x-rays, and laboratory procedures, etc.

We, therefore, seek the Society's advice about overutilization of physicians' services, surgery required, reasonableness of fees, and appropriateness of laboratory and x-ray procedures. We are required to have adequate documentation to support payment of unusual patterns of care or charges.

Inasmuch as nursing services are not covered under the Medicare Act, regardless of the individual performing them, we seek advice about those services that require a physician's skill, and to eliminate services that could be performed by a nurse or other individual. Preventative medicine, while very desirable and important, is not covered under the Medicare Law. We therefore, seek advice that will enable processing personnel to segregate and exclude those pro-

(*Continued on page 525*)

The Medical Society of Virginia . . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was held on Sunday, May 3, at Society headquarters.

Members Present: Dr. William Grossmann, Dr. James M. Moss, Dr. F. Ashton Carmines, Dr. Dennis P. McCarty, Dr. Mack I. Shanholtz, Dr. Harry J. Warthen, Dr. Raymond S. Brown, Dr. William S. Hotchkiss, Dr. William R. Hill, Dr. George J. Carroll, Dr. F. H. McGovern, Dr. John A. Martin, Dr. James C. Respess, Dr. William D. Liddle, Jr., Dr. Carl E. Stark and Dr. Carl P. Parker, Jr.

Others Present: Dr. Arthur A. Kirk, Third Vice-President; Dr. Alexander McCausland and Dr. W. Callier Salley, AMA Delegates; and Mr. Chad P. Combs, Department of Field Service, American Medical Association.

1. Dr. Palmer and AMA Board of Trustees

Dr. Grossmann informed Council that Dr. Richard E. Palmer was a candidate for Trustee of the American Medical Association. Dr. Palmer will seek to fill a vacancy on the Board resulting from the decision of Dr. Alvin A. Ingram, Tennessee, not to stand for re-election.

Dr. Grossmann went on to say that, because of the time factor involved, he had authorized a number of Night Letters to be sent in Dr. Palmer's behalf and expressed the hope that his decision would be supported by Council. It was learned that the total cost of sending Night Letters to all AMA delegates, alternates and the various state medical societies, would total approximately $700.00. It was anticipated that an additional $150.00 would be needed to prepare and mail an appropriate letter providing details on Dr. Palmer's career.

It was brought out that it has been many years since Virginia has had a physician on the AMA Board of Trustees and everyone seemed most pleased that Dr. Palmer had consented for his name to be placed in nomination. *A motion by Dr. Hotchkiss supporting the action of the President and authorizing an appropriation of $850.00 to cover the necessary expense involved was seconded and adopted.*

2. Organization of Council and Committees

Dr. McLemore Birdsong, a member of the Society's special Committee on the Future Mission of the Society, discussed that Committee's recommendations pertaining to the organization and committee structure of the Society. The thought was expressed that, over the years, our committees generally have not been properly stimulated and, consequently, have never realized their real potential.

In an effort to correct the weaknesses in the committee structure, it was recommended that the various committees be grouped under six special Sections —each Section under the direction of a Section Chairman. While all committees would be appointed by the President, the Section Chairmen would be elected by the Committee Chairmen within the respective groups. The six Sections would be designated—

(1) Internal Activity
(2) Communications
(3) Advisory and Liaison
(4) Medical Service
(5) Education
(6) Financing of Medical & Health Care

It was also the Committee's recommendation that the incoming President have his committees appointed by September 1 in order that the appointees will attend the Annual Meeting. It was also urged that component societies be requested to recommend members for the various committees.

Another recommendation was that a special one-day meeting for Committee Chairmen be held at an appropriate time during the year—possibly in conjunction with a meeting of Council. Hope was expressed that the committees themselves should meet at least twice a year if at all possible.

Job descriptions for committees were also recommended in order that the various areas of responsibility could be clearly delineated.

Dr. Birdsong went on to state that the Committee had given much thought to Council as presently constituted and believes that all voting members should be elected. For this reason—and none other—it was recommended that the Commissioner of Health and Editor of the Virginia Medical Monthly be designated ex officio members of Council without vote. It is recognized that both of these individuals contribute a great deal to Council and should, by all means, continue to participate in its activities.

It was then moved by Dr. Parker that the Committee's report be adopted and referred to the Judicial Committee for such steps as are necessary for implementation. The motion was seconded.

It was then made clear that the Judicial Committee should prepare for consideration by the House of Delegates those amendments to the Constitution and By-Laws required to make possible the recommendations contained in the report. Attention was called to Article VI of the Constitution and the advisability of amending the last sentence to show the Editor and State Health Commissioner as ex officio members of Council without vote.

Dr. Parker's motion was then adopted.

3. Communications

Dr. Richard E. Palmer, also a member of the special Committee on the Future Mission of the Society, reported that body's thoughts and recommendations concerning communications and other public relations activities. He stated that physicians individually and collectively has been guilty of a communications failure, and pointed to Medicare as a good example. He pointed out that medicine has seemingly been unable to defend itself against the many unfounded accusations made against it by the Senate Finance Committee, CBS, etc. Medicine has failed to communicate with patients about their illnesses, fees, grievances, etc. It is of the greatest importance that medicine's points of view be promoted—not selfishly, but on behalf of the public interest. Dr. Palmer stated that this can be accomplished within the "Guidelines For Physicians With The Communications Media" as set forth by the AMA Judicial Council.

The Committee report deplored the fact that less than 2,300 of the Society's 3,600 members belong to AMA—at a time when strength and unity are of the utmost importance. A strong Society is one in which each member participates with enthusiasm because of an awareness of the benefits of organized medicine and the importance of an effective communications program. It was brought out that really worthwhile and effective programs do not come cheaply and the dues of The Medical Society of Virginia were, until the last Annual Meeting, the lowest in the entire Nation.

Dr. Palmer went on to say that the need of an additional staff member who possesses the special abilities needed in communications is quite evident. Consequently, it was recommended that such an individual be obtained.

It was then moved by Dr. Martin that the report and recommendations as presented by Dr. Palmer be adopted. *The motion was seconded and carried.*

4. Annual Meetings

A special report containing certain recommendations for Annual Meetings was made available to Council as a matter of information. The report had been prepared by the special Committee studying the Future Mission of the Society. Mention was made of the fact that many of the Committee's recommendations are actually being implemented this year.

5. House of Delegates

Dr. Liddle expressed the hope that means could be found to stimulate greater interest in Society activities and that perhaps a greater turnover of Delegates might be one way to accomplish this objective. A question was raised concerning the number of component societies which, for all practical purposes, exist mainly on paper. It was brought out that there are one or two societies which have five members or less.

It was agreed that the Committee studying the Future Mission of the Society should give some thought to the matter of component societies and the apportionment of Delegates.

6. 150th Anniversary Observance

Dr. Warthen reminded Council that 1970 marks the 150th Anniversary of both The Medical Society of Virginia and Richmond Academy of Medicine. A special committee is now at work studying appropriate ways of observing the occasion. A joint exhibit has been proposed for the Annual Meeting and would feature, among other things, pictures of Society Presidents through the years, past issues of the Virginia Medical Monthly, and other items tracing the history of medicine in Virginia.

Dr. Warthen also discussed the possibility of displaying bronze plaques at the meeting commemorating the Anniversary. The plaques could then be mounted in the headquarters buildings of the Society and Academy.

Dr. McGovern expressed the thought that every effort should be made to obtain as much favorable publicity as possible from the event. For example, the Society could stress what medicine has accomplished in our State over the 150-year period.

Dr. Warthen indicated that the total cost of the exhibit probably would not exceed $1,000 and that the Richmond Academy of Medicine would be re-

sponsible for one-half. It was then moved by Dr. McCarthy that a sum not to exceed $500 be appropriated for the purpose of developing a suitable exhibit to be used in connection with the 150th Anniversary observance. *The motion was seconded and adopted.*

7. Liaison Committee to Medicare

Although all component societies have been requested to appoint special committees to review problems submitted by the Travelers Medicare Office, Dr. Grossmann was of the opinion that the Society should have its own Committee to consider those matters referred from physicians and component societies. A number of matters have been referred to the Society in recent weeks and the number will undoubtedly increase as time goes on.

Dr. Grossmann stated that Mr. Kelly, the Travelers Medicare Administrator, has been most cooperative and is very anxious to develop an effective working relationship with Virginia physicians.

It was then moved by Dr. Martin that the President be requested to appoint a Medicare Committee at the State level. The motion was seconded.

Discussion brought forth the opinion that the various specialty groups should be represented on the Committee if at all possible. It was generally agreed, however, that the best plan would be to have the Committee utilize consultants designated by Presidents of the specialty groups.

Dr. Martin's motion was then adopted.

8. Medicaid Billing

It was recalled that on December 10 a special committee headed by Dr. Leonard Weyl had made three recommendations concerning Medicaid billing. The three recommendations which had to do with coding, interval billing and freedom of choice in billing, were sent by Council to the Governor's Advisory Committee on Medicaid for consideration.

Dr. Grossmann stated that the recommendations had been considered thoroughly by the Governor's Advisory Committee. It was learned that the number of participating physicians has been steadily increasing and that only thirty-three resignations have been received since the program was implemented. Only thirteen of the thirty-three resigned because of dissatisfaction over the billing procedure. Dr. Grossmann went on to state that little difficulty was being experienced with the claim form and coding system and that less than 5% of the forms are having to be sent back at the present time.

He went on to say that a recent test survey indicated that the average medical assistant needed only 1.75 minutes to complete the Medicaid form as against 2.5 minutes for a Blue Shield form.

It was learned, however, that the present claim form will be revised somewhat in the Fall and that any recommendations from individual physicians will be welcome.

Dr. Parker expressed the opinion that the Medicaid system has placed an additional cost on physicians and the problem will be compounded if and when the various commercial companies also adopt a highly computerized billing system. He then moved that the report of the Governor's Advisory Committee be received by Council with displeasure. The motion, however, was lost for want of a second.

It was moved by Dr. Liddle that for the Society's own information, the President write Blue Shield and request the cost of handling each Blue Shield claim and that the Department of Health be written for similar information concerning the handling of Medicaid claims. The motion also requested the President to write the Travelers Medicare Office and obtain the cost of processing individual Medicare claims. *The motion was seconded and adopted.*

9. Hospital Staff Physicians

When Council met on December 10 it was advised that the Department of Vocational Rehabilitation had encountered some difficulties in making payments for services performed by residents and assistant residents in some hospitals. One of the principal difficulties had to do with the determination of fees. Some of the Department's medical consultants were reluctant to suggest fees for surgery performed by residents and, consequently, the Society had turned to its special Insurance Review Committee for this purpose.

Council was advised that the Review Committee had expressed the feeling that Rehabilitation cases should be handled the same way at both medical schools and other training centers. The Committee did not feel it was justified in handling the cases in different ways and requested that it be relieved of the responsibility of considering such cases until the problem could be resolved.

Dr. McCausland, Chairman of the Society's Rehabilitation Committee, discussed the problem and indicated that the present inconsistency dates all the way back to 1953. He indicated that in the beginning no payment was made for services provided by house staffs at either of the two hospitals under discussion. However, because of some difficulty in

obtaining reports on Rehabilitation clients, it became necessary to implement the present method of handling such cases. This involves authorization to the Chief of the Service concerned who then assumes responsibility for initial reports and submission of a discharge summary. Rehabilitation then pays the Department head for the services provided.

Dr. McCausland made it clear that the Department of Rehabilitation has referred none of the patients in question to the medical school hospitals. These patients come through the clinics in a normal manner and, if in need of medical services, are referred to an appropriate Rehabilitation Councilor. The necessary services are then authorized if the patient meets eligibility requirements.

The Rehabilitation Committee fully agrees that every effort should be made to resolve the problem and bring consistency to the program. It had been the Committee's hope that, until this could be accomplished, the Review Committee of The Medical Society of Virginia could recommend fees for the various cases. Dr. McCausland stressed the fact that the Department has, for the past several years, worked in close cooperation with the Society. He cited the appointment of medical consultants in the various Districts as a good example.

Dr. McCausland expressed regret that the Review Committee could not find its way clear to continue to recommend fees where needed. In summary, he stressed the following points:

1. Rehabilitation patients at the medical schools are not patients referred by the Department. Actually, they are already in the hospital and patients of the house staff before they are referred to Rehabilitation.
2. The lack of a consistent policy can be attributed to a delay in negotiations with the medical schools concerned.
3. The only major problems involving fees are those having to do with individual consideration cases.
4. Rehabilitation does not, and will not, compete with the physician in private practice.

Dr. McCausland then expressed the feeling that the problem was essentially administrative in nature and should be resolved by the two schools and the Department. It is not a medical matter per se.

A motion was then offered by Dr. Stark which would have Council consider the problem as essentially an administrative matter and not one requiring Society intervention. *The motion was seconded and carried.*

Dr. Respess indicated that the Albemarle County Medical Society is very much interested in the matter —particularly as it relates to the University of Virginia—and will consider the various ramifications.

10. Annual Meeting Guests

Several years ago Council decided to discontinue the policy of inviting representatives of neighboring medical societies to our Annual Meetings. This action was taken at the request of some other state societies which had decided to discontinue the practice.

Dr. Grossmann stated that the trend now seems to be in the other direction and that he has received a number of invitations during the last six months. He went on to say that he recently attended the annual meeting of the Medical and Chirurgical Faculty of Maryland and had benefited greatly from the experience. He expressed the feeling that much is to be gained by an exchange of ideas and that the current policy should be rescinded.

Dr. Liddle then moved that the Society resume the traditional practice of inviting the Presidents of neighboring state medical societies, and their wives, to attend Annual Meetings as our guests, and that we initiate the practice of inviting the Presidents-Elect of these societies to attend—one at a time—a meeting of the Executive Committee and Council for the purpose of exchanging ideas and familiarization. The motion was seconded.

Dr. Hotchkiss then moved that the question be divided. *The motion was seconded and adopted.*

The first part of Dr. Liddle's motion having to do with Presidents of neighboring state societies and their wives was seconded and adopted.

The second part of the motion having to do with Presidents-Elect attending meetings of the Executive Committee and Council was discussed at considerable length and there was some feeling that the matter needed further study. It was brought out that state society officers do meet during meetings of AMA and are afforded an excellent opportunity for exchange of ideas. Dr. Stark then offered a substitute for that portion of the motion under consideration—calling for the President and President-Elect to discuss the suggestion with our neighboring societies and obtain their reaction. *The substitute motion was seconded and carried.*

11. Mulholland Society Seminar

Dr. Grossmann reported that The Medical Society of Virginia had been very well represented at a re-

cent Seminar on the Delivery of Health Care presented in Charlottesville by the Mulholland Society of the University of Virginia School of Medicine. Most all of those who attended were impressed with the sincere concern of the students for the future of health care in the Nation. While there was not always complete agreement with everything the speakers had to say, it was agreed that their thoughts deserved serious consideration.

12. Himler Report

As directed by Council during its January meeting, copies of the report of the AMA Committee on Planning and Development (Himler Report) were sent each component society with the request that any recommendations be made known as soon as possible. Council was anxious to have some indication of the Report's acceptance in order that the Society's delegates to AMA could be properly instructed. It is anticipated that the AMA House of Delegates will consider the Report in detail during its June meeting in Chicago.

Three component societies had submitted reports and several others had sent word that they were still in the process of preparing their recommendations.

The general feeling seemed to be that the Report does represent a step forward although a great deal of it is admittedly controversial. The thought was expressed that the Committee was guilty of hedging on many of the subjects covered.

During the discussion it was brought out that our present system of delivering medical care is not adequate if popular demands are to be met. The role of closed panel plans was discussed and mention made of the fact that Virginia law prevents their operation in the State at this time. Past opposition to closed panel plans has resulted from the fear that they might become dominated by lay boards, that freedom of choice would be affected, and the solo practitioner penalized.

It was then moved by Dr. Hotchkiss that the Society's delegates to AMA be advised that Council is in general accord with the provisions of the Committee's Minority Report written by Dr. John Budd of Ohio. The motion was seconded.

Dr. Carmines then offered a substitute motion to accept the full Report with the Minority Report incorporated as information to be considered and that no final action or endorsement be taken until component societies had sufficient opportunity to make known their thoughts and recommendations. The substitute motion was seconded.

It was then moved by Dr. Moss that all pending motions be tabled. *The motion was seconded and carried.*

13. Congressional Luncheon

Dr. Grossmann announced that everything was in order for the Congressional luncheon on May 5. He stated that a new format would be used this year, featuring informative statements on the private sector of medicine, public health and medical education. It was Dr. Grossmann's intention to make known medicine's resentment of the unwarranted accusations contained in a report prepared by the Senate Finance Committee on the Medicare program.

14. Report of Council Actions

A question was raised as to whether it might be wise for the actions of Council to be reported in a special newsletter to the membership. Although complete minutes are published in the Virginia Medical Monthly, the fear was expressed that they are not read as thoroughly as they deserve. It was agreed that this particular matter might be discussed at greater length during the June meeting of Council.

There being no further business, the meeting was adjourned.

Robert I. Howard, *Secretary*

APPROVED:

William Grossmann, M.D., *President*



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Woman's Auxiliary . . . .

Virginia Boasts a National Director

. . . of the Woman's Auxiliary to the American Medical Association. Mrs. Daniel Anderson, one of six directors, was elected and installed at the 47th annual convention. Anna resides in Norfolk with her husband and their three children.

Anna served as president of her county auxiliary in 1964, State president in 1967 and Eastern Regional Chairman of Children and Youth in 1969. The combination of charm, experience and enthusiasm which Anna brings to this office can only ensure continued success.

Virginia delegates to national convention were Mrs. Joseph M. Straughan, of Wise, presidential delegate; Mrs. David Hill, of Lynchburg, chairman of delegates; Mrs. Reuben F. Simms, of Richmond; Mrs. James Moss, of Alexandria, Mrs. Daniel Anderson, of Norfolk and Mrs. F. Ashton Carmines, of Newport News. May Straughan, president, presented Virginia's report in the allotted two and one-half minutes, then served as "keeper of the buzzer" with Mrs. Leslie Whitney of Delaware during the western regional reports.

Rapid and Frequent Change

. . . is today's life pattern; the individual rarely adjusts to one new development before a more advanced one replaces it. The youth of today are affected by the same rapid changes and are groping for a more definite direction in life. They are not a faceless generation without character and quality. They are not children throwing tantrums. They are old enough to pay taxes, fight and die for this country. This article refers to those between the ages of eighteen through twenty-four. Social and political action of today's students differ only by degree from their earlier prototypes. The new students tend to apply themselves to the same basic trends as yesterday's students except for a rather sharp change in the philosophy of life. Of the enrolled college students the dissident 7% are the main concern of our society. While the majority of students still tend to be conformist, passive and apolitical, the activity of the dissidents may influence the destiny of all.

Parenthood Today Is Seldom Dull and Never Boring

. . . particularly in the maelstrom of intergenerational conflict. Has any generation in history been more child oriented than the American parents of today or more puzzled and shaken by the results? If the parent views the rebellion in highly personal terms, the youth immediately erects a barrier in self defense and communication becomes impossible. In substantial homes where links of mutual affection and respect prevail the battle lines between generations are fuzzy and the political radicalism does not tend to disrupt the family. Almost without exception the youth who drops out of society into some drug-taking subculture experiences a vacuum at home, an ethical and emotional void in which he cannot find his parents or himself. Dissidence begins when there is a communication gap between the generations. Several studies have concluded that the gap is not so much between the parents and children as between children and the world which their parents' generation created.

Parents of the 1940's grew up in the depression when talent, ambition and experience was prolific and opportunities were few. Preoccupation with financial and physical security were of prime importance. For all of their supposed materialism that generation has promoted an enormous expansion of humanitarian programs, public and private, supported a considerable flowering of American drama, music, art and

literature, and brought about an explosive growth in educational opportunities. Robert Albrook writes in the book *Youth in Turmoil,* "Often accused by their offspring of not practicing what they preach, today's parents have, more often, simply not been preaching what they practice. While they have been busy experimenting with religious liberalization and ecumenism, with racial integration, social mobility and the extension of more democracy to home, office and factory than their grandfathers ever could have imagined, they have not written a contemporary book of rules." The children's burden is not the beginning of a social revolution, but rather the completion of the social revolution their parents began. As an unfortunate and all too common result, many younger men and women believe they were the first to discover the world's imperfections and that they first thought of improving it. Not all young reformers acknowledge it, but youthful radicalism is generally an extension of their parents' liberalism.

Many youngsters involved in these movements are generally sincere and honest. They are moved by a highly developed sense of values and genuinely want to improve the world. Many come from families with whom they have close ties although they possess strong and ambivalent feelings about them; basically they admire their parents and adhere to principles of a family in which liberal politics are taken for granted. Much will depend on the parents of today and on their willingness to offer more than insincerity, distrust and disrespect to the young generation that is struggling for a world which, in a few years will be their own.

October Is the Auxiliary Membership Month

. . . but remember "summertime is our planning time" to get the machinery oiled for autumn. The young doctor's wife needs the auxiliary and the auxiliary needs her. It is necessary to demonstrate to the eligible members your interest by making a visible and audible campaign.

1. A cordial letter, card or invitation
2. Telephone calls to establish personal contact and arrange to bring potential members to the meetings
3. Publicity to acknowledge new members, outline programs and projects for the year.

Reach out to the new eligibles, may-be members and the drop-outs. Plan a definite campaign and utilize new ideas. Your own membership can be your best public relations. *Auxiliary Holding Power* is in direct proportion to the auxiliaries ability to relate to the problems of the times as well as the needs and concerns of its members and communities. There is no shortage of worthwhile projects and meeting programs for the medical auxiliary. Well planned concise meetings can *hold* membership. If business is not conducted through separate Board or Executive Committee meetings, it should be kept short at regular meetings. Plan now. 100% membership is all that is asked, which should benefit all!

Mrs. Hans J. Klapproth

Miscellaneous....

KIT DAVISON

Unwed Mothers.

Today, in spite of the pill and reformed abortion laws, there are still many children conceived and delivered who have not been planned for by their parents.

Most doctors at some time have been contacted by a pregnant single woman who seeks advice in making a plan for herself and the expected child. These women often are in need of much more than a home for their babies. They frequently need a place to stay during their pregnancies, help in getting adequate medical attention, and counseling about what plans are available to provide secure lives for their children. A knowledgeable physician will be able to give these women sources of help to which they can turn in Virginia.

There are eight maternity homes in operation thoughout the State which offer solutions to many of the critical needs of unwed mothers. Each has a list of qualified adoption agencies that have social workers who are trained to help mothers make plans for the futures of their children. The Children's Home Society of Virginia has counseled more women on adoption planning during recent years than any other private agency in the State. Most welfare departments also offer adoption services for unwed mothers, and several major religious denominations provide these services.

If a woman's decision is neither to marry or to abort her pregnancy, a maternity home will offer protection from the often critical attitudes of family and society. She may wish to hide her pregnancy from her family and friends or, on the other hand, she may feel that she is receiving a smothering type of concern and sympathy at home. Maternity homes can provide both privacy and security; they also offer the companionship of other women who are in the same situation.

In many of these homes, girls are allowed to continue working on daytime jobs in the local community to help themselves financially. There are also local private homes that employ the pregnant woman on a live-in basis during the earlier period of her pregnancy, offering home-like surroundings for the younger girl who is away from her family for the first time.

Maternity homes also offer the expectant mother well-planned prenatal care, instruction on delivery procedure, and postnatal care for herself and her child. All deliveries are performed in qualified hospitals, and there is a maternity home staff member with the woman during her labor and available to visit her in the hospital if her family is not with her.

During an unwanted pregnancy, many women are in need of psychological counseling. Both adoption agencies and maternity homes have staff members who are qualified to help girls understand themselves more fully and the problems that may have caused their current situations. If these problems are serious enough, the adoption agency caseworker assists in finding a psychiatrist. Several maternity homes are run by churches. These religiously oriented homes can have special meaning to a woman who wants advice and comfort in accord with her personal religious beliefs.

If the expectant mother is considering adoption as a plan for her baby, she begins contacts with an adoption agency soon after entering a maternity home. An agency like the Children's Home Society of Virginia offers its counseling service to maternity homes throughout the State. The Society has offices in Arlington, Richmond and Roa-

Miss Davison is Caseworker for the Children's Home Society of Virginia.

noke, and service is also offered to maternity homes in Norfolk and Lexington.

Once the agency has been contacted by an expectant mother, it can arrange routine interviews with her at the maternity home. The adoption agency philosophy should involve working with the woman to help her explore *all* plans that might be available to her. No effort is made to make decisions for her or to persuade her to place her child for adoption. The agency's main concern is the security and happiness of the child.

If adoption is the best plan available to both mother and child, the agency then makes arrangements for the legal release of custody by the mother. In Virginia this release may not be given by the mother until her child is ten days old.

The unplanned for baby then becomes the long awaited baby of an adoptive family and the baby's mother can leave the maternity home with the comfort of knowing that she took positive, constructive steps to plan a secure life for her child.

Maternity Homes

Brookfield, Inc.
RFD 4, Box 298
Glen Allen, Virginia 23060

The Salvation Army Home & Hospital
(Evangeline Booth)
2705 Fifth Avenue
Richmond, Virginia 23222

Seton House
7700 Washington Highway
Richmond, Virginia 23227

St. Gerard's Maternity Home
2511 Wise Street
Richmond, Virginia 23225

House of Mercy
Klingle Road and Rosemount Ave.
Washington, D.C. 20010

The Florence Crittenton Home
4759 Reservoir Road, N.W.
Washington, D.C. 20007

The Florence Crittenton Home
563 Oakely Avenue
Lynchburg, Virginia 24501

The Florence Crittenton Home
771 W. 52nd Street
Norfolk, Virginia 23508

Licensed Child Placing Agencies and Executive Directors

Children's Home Society of Virginia
4200 Fitzhugh Avenue
Richmond, Virginia 23230
Earl W. Childress, Jr.

Children's Home Society of Virginia
3150 Wilson Boulevard
Arlington, Virginia 22201

Children's Home Society of Virginia
1620 Fifth St., S.W.
Roanoke, Virginia 24016
Mrs. Louise McCown

Catholic Family and Children's Services
2115 High Street
Portsmouth, Virginia 23704
The Reverend Thomas J. Cassidy

Catholic Family and Children's Services
811 Floyd Avenue
Richmond, Virginia 23220
Monsignor John J. McMahon

Catholic Family and Children's Services of Roanoke
2823 Williamson Road
Roanoke, Virginia 24012
Sister Jeanne Clare

Catholic Charities of Northern Virginia, Inc.
4049-21st Street, North
Arlington, Virginia 22207
The Reverend James T. Sweeney

Catholic Family and Children's Service
1301 Colonial Avenue
Norfolk, Virginia 23517
The Reverend Thomas J. Cassidy

Catholic Home Bureau, Inc.
318-34th Street
Newport News, Virginia 23607
The Reverend Frederick Heckel

Child & Family Services, Inc.
1306 Colonial Avenue
Norfolk, Virginia 23517
Mr. Earl D. Morris

Child & Family Service-Traveler's Aid, Inc.
316 Citizens Trust Building
355 Crawford Parkway
Portsmouth, Virginia 23704
Mr. Vance W. Foster

Family & Children's Service of Richmond
221 Governor Street
Richmond, Virginia 23219
Miss Marguerite W. Farmer

Friends' Association for Children
1713 North First Street
Richmond, Virginia 23219

Virginia Department of Welfare and Institutions
429 S. Belvidere Street
Richmond, Virginia 23220
Otis L. Brown, Director

4200 Fitzhugh Avenue
Richmond, Virginia 23230

MEDICARE (PART B)—*Medicare Claim Review*
(*Continued from page 515*)

cedures which are not related to diagnosis and treatment of disease.

In that drugs which can be self-administered are not covered under the Medicare Law, we seek advice when injectable medication is used as a part of the physician's service, why oral medication would not be efficacious.

We also advise the Review Committee that our certification that payment is proper is to be based upon the data contained within the Medicare file itself and must be made on an item by item basis and not on the services and charges as a whole.

Editorial . . . .

The Unbalanced Reformer

I HAVE BEFORE ME the last publication of the greatest manic depressive benefactor of mankind's womankind. Ignace Semmelweis was his name. You know him as the conqueror of childbed fever. He was not the first to blame dirty-handed attendants. Charles White (1778) of Manchester, Robert Collins (1836), and Oliver Wendell Holmes (1843) had done so. The first two were ignored by the medical public. Holmes raised a storm from indignant obstetricians which, however, did not bother his mental balance. The calm man shrugged. You will also remember that when Joseph Lister proposed what became "Listerism" he knew abuse. But he was a great stout man who bulldozed his way to fame, fortune, and baronetcy. Semmelweis, the passionate reformer, was far more sensitive. He ended his days in an asylum.

He came upon the great truth a little later than Holmes, but likely independently. He had been given charge of a maternity ward where the patients were delivered by medical students. Death from puerperal sepsis was at the incredible rate of nearly 11%—110 per thousand deliveries. In more than 25 years I recall having seen only one death from puerperal sepsis. The whole department mourned for weeks. Yet poor Ignace saw septic deaths daily. Daily he heard the tinkle of the little bells which announced the coming of a priest to administer final rites. He sat in his nearby room, hand over ears, eyes closed.

And then one day he made an observation which channeled his genius. A colleague had died of what we know as sepsis following an accidental injury while doing an autopsy. At the doctor's postmortem Semmelweis observed lesions which were very like those found at autopsy of his dead maternity patients. The deadly disease had been spread by the knife. Human beings with dirty instruments and unclean hands spread the disease! That was it! At once he ordered extreme cleanliness and the scrubbing of all hands in chlorinated lime, especially the hands of medical students who had been in the autopsy room. He made himself obnoxious, just like the non-violent campus radicals of today. The fact that his mortality dropped from 11% to 1% made him even more obnoxious, as obnoxious as only a correct radical reformer can be. He wrote articles and enlarged the medical population who disliked him. He first published in 1847 in *Zeitschrift der K.K. Gesellschaft der Aerzte zu Wien,* fourteen years before he published his definitive and famous *Aetiologie.* This latter 1861 publication established his fame (a few years ago a copy sold for $14,000, ranking him with Vesalius and Harvey) and fixed upon him the rage of his contemporaries. The great book presented such a mass of material so poorly digested and confusedly reported that his detractors refused to believe a word of it. He at once tried to rebut his critics by publishing in 1861 two fairly short open letters to individual

obstetrical professors. The next year he lashed out with this item at hand, *Offener Brief an sammtliche Professoren der Geburtshilfe*, Ofen, 1862. In it he rather sarcastically defends himself and his ideas and pleads for women's lives. He had found only a few supporters, many abusers.

In this small book of 100 pages he is very repetitive. His German is a little hard to follow at times. He uses words not to be found in the largest dictionary available. His material is not well organized even here. He ignores Holmes and Collins. Possibly he had never heard of them, but this seems unlikely since he gives every evidence of having thoroughly studied the literature. Just as we date general history A.D. and B.C. he seems to date obstetrical history as before and after the year 1847 when his "Lehre" and "chlorwaschungen" were first announced. He quotes endlessly the statistics of every maternity center in Europe. He disputes "authorities" bitterly.

There is no intent to amuse, but he shows how the death rate from puerperal fever always began to rise in October when the medical students began their year and their autopsies and continued high during the winter. Then the rate dropped quickly in the spring when enthusiasm for autopsies waned and the young men began to engage in their wine and cheese picnics in the country.

This last blast at professors and medical students did not further his cause. Practically none of the prominent obstetricians and other physicians of the day credited his "lehre" for many years. It is startling to read that the still famous Scanzoni and Carl Braun sneered. Even Virchow opposed him. Incredible! Semmelweis was not emotionally strong enough to endure the abuse and see his life-saving "Lehre" ignored. He died in 1865 in a mental institution, significantly enough of septicemia following a (self-inflicted?) cut. In 1894 the Viennese who had so abused him erected a belated monument to him, woman's greatest friend.

Here was a man with a great idea, not entirely new it is true, but for the first time presented with overwhelming proof. He was ignored or fought by nearly all of the offended obstetricians of his time. His idea, which involved blaming doctor's carelessness for patients' deaths, was new, thus bad. Perhaps we have gone to the opposite extreme. Many of us are psychologically prepared to believe that every new drug, instrument, or method is better simply because it is new. Uncritical, immediate acceptance is just as foolish as blind refusal to consider a new idea. I can think of several "great" new drugs which have been promptly abandoned.

GORDON W. JONES, M.D.

A New Criterion for Possible Admission to UVa.

THE GUEST EDITORIAL in this issue of the Virginia Medical Monthly entitled "An Evaluation Program for Prospective Applicants to Medical School" deserves more than casual reading. In order to place this program in proper perspective we should go back a little over 100 years—in fact to 1860 and then return to 1970.

In 1860 Harvard and the University of Virginia were two of the largest and best regarded institutions of higher learning in America. After lagging in size for several decades, about the middle of the 19th century Harvard pulled abreast Virginia and by 1860 had become slightly larger. It is of interest that it still termed itself Harvard *College* whereas the University was a university from its founding. Harvard's medical school was older and had a larger faculty with vastly more clinical material. The medical department of the University, meanwhile, had limited clinical material and the courses were largely didactic. Furthermore Harvard drew from the populous and prosperous north and east while Virginia students came from the agricultural south.

The War of 1861-65 and its aftermath changed all this. Harvard forged ahead numerically and academically. Virginia, on the other hand, dwindled to about a third of its former size. For the next half century the University led a hand-to-mouth existence with virtually no support from the State, or any other source, for that matter. It was another example of the rich becoming richer, and the poor becoming poorer. An instance of this occurred recently when Harvard received within a single year gifts that surpassed the entire present endowment of the University. Few will question that Harvard has become the leading medical school in this country.

Despite these financial handicaps the medical department of the University continued over the years to raise itself by its own boot straps through the efforts of a small but devoted faculty and a loyal body of alumni. Each year the admission committee could be more selective and each graduating class became more representative of the best in American medicine. It is unfortunate that many members of the present faculty are not aware of all this.

With this in mind it is hard to escape the conviction that the new "Evaluation Program" described in this month's Guest Editorial threatens to undo much that has been accomplished in the past. The evangelistic zeal that permeates the article speaks well for the good intentions of the committeemen who proposed this plan, but it also bodes ill for what may

happen to the University. A crash program with "the primary objective" to identify individuals with potential ability which otherwise would go unrecognized by the Admissions Committee leads inevitably to two possible conclusions. Either unqualified students will be admitted to the medical school or the Admissions Committee has not done a very good job in the recent past. The former seems more likely. To confuse the issue further, some of the committeemen recommending this departure are also members of the Admissions Committee.

A second disquieting aspect is the committee's evident desire to correct in this manner discrimination it feels has occurred in the past. However, in doing so, the present plan is an example of discrimination in reverse. Unless members of this summer coach class are capable of doing work as good as that performed by "white middle-class students" who are applying for admission, the latter applicants with better academic credentials, who are refused admission, will have been discriminated against. Two wrongs still do not make a right. And how did those foreign, undemocratic, hyphenated words, "middle-class", find their way into the lexicon of Mr. Jefferson's University?

It is significant that a similar program conducted at the University School of Law in the summer of 1969 was not repeated this summer. It is unfortunate that the school of medicine should play the role of bellwether in such an uncharted course. If enrollees who are subsequently permitted to enter the medical school prove incapable of keeping up with their classmates it will mean much time and labor have been lost by everyone concerned. If on the other hand, an indulgent faculty permits subpar enrollees to continue and receive their degrees, these graduates will reflect no credit on the University. The public too will ultimately suffer regardless as to how well intentioned the committee's motives may have been.

It is risky business at best, but now that this "Evaluation Program" has been embarked upon, it is to be hoped that it will prove successful. Possibly the best ultimate solution would be to encourage the enrollees with the greatest aptitude to attend the medical schools with the largest classes and the highest academic standards. If this suggestion is followed, and the experiment should prove unsuccessful, relatively less harm would accrue to the strongest institutions than to the University. Perhaps some might even matriculate at Harvard.

H.J.W.

News . . . .

Calendar of Events

Flying Physicians Association—Annual Meeting—Bay Shore Inn—Vancouver, British Columbia—August 23-28, 1970.

Southwestern Virginia Medical Society—Fall Meeting—Red Carpet Inn—Pulaski—August 27, 1970.

American Electroencephalographic Society—Continuation Education Course on "Current Practice of Clinical Electroencephalography"—Washington, D. C.—September 14-16, 1970.

Virginia Nursing Home Association—Annual Meeting—Hotel John Marshall—Richmond—September 15-17, 1970.

Legal Conference for Medical Society Representatives and Counsel—Sponsored by American Medical Association—Ambassador West Hotel—Chicago—September 18, 1970.

National Congress on Medical Ethics—Sponsored by Judicial Council of American Medical Association—Ambassador West Hotel—Chicago—September 19-20, 1970.

The Medical Society of Virginia—Annual Meeting—Hotel John Marshall—Richmond—October 11-14, 1970.

Symposium on Emergency Room Procedure—Sponsored by St. Mary's Hospital—Richmond—Afternoon of October 14-15, 1970.

Tennessee Valley Medical Assembly—Read House—Chattanooga, Tennessee—October 19-20, 1970.

American Cancer Society, Virginia Division—Annual Meeting—Hotel Jefferson—Richmond—October 21-22, 1970.

Symposium on Radiology and Nuclear Medicine—Presented by Department of Radiology, Memorial Hospital, Danville and Department of Radiology, Duke University Medical Center—Memorial Hospital—Danville—November 4-6, 1970.

Congress of County Medical Societies—Annual Meeting and Seminar on Private Practice—Netherland Hilton Hotel—Cincinnati, Ohio—November 6-8, 1970.

Virginia Hospital Association—Annual Meeting—The Homestead—Hot Springs—November 12-13, 1970.

American Heart Association—Scientific Sessions—Convention Hall—Atlantic City, New Jersey—November 12-15, 1970.

Pediatric Postgraduate Course—Problems in the Newborn Infant—University of Virginia School of Medicine—Charlottesville—November 13-14, 1970.

Southern Medical Association—Annual Meeting—Dallas, Texas—November 16-19, 1970.

National Conference on Cancer of the Colon and Rectum—Hotel del Coronado, San Diego, California—January 7-9, 1971.

New Members.

The following new members were received into The Medical Society of Virginia during the month of June:

Jorge Oscar Arnoldson, M.D., Arlington
John Beale Howard Caldwell, M.D., Richmond
Eustace Stanley Grannum, M.D., Newport News
Carlos Metsch Hecker, M.D., Vienna
Alvin Seymour Hyde, M.D., Reston
Nicholas Helias Maganias, M.D., McLean
Gerald Lee Mandell, M.D., Charlottesville
Michael Mogadam, M.D., Falls Church
Nelson Glasgow Richards, M.D., Roanoke
Paul Gregor Rochmis, M.D., Arlington
Thomas Long Sarvay, Jr., M.D., Roanoke
Melvin D. Small, M.D., Falls Church
Juan Trinidad, M.D., Vienna
Jorge E. Villavicencio, M.D., Fairfax
Lee Elias Whitlock, Jr., M.D., Norfolk
Philip Charles Wilson, M.D., Hampton

Dr. Richard E. Palmer,

Alexandria, has been elected to the Board of Trustees of the American Medical Association. He is the first Virginian to hold this office since Dr. Walter B. Martin in the mid-1950's.

Virginia Doctors Receive AMA Awards.

Drs. Cary Suter and Hooshang Hooshmand, Medical College of Virginia, Richmond, received a certificate of merit for their exhibit at the recent annual meeting of the American Medical Association in Chicago. Dr. James M. Moss, Alexandria, received an honorable mention for his exhibit.

Dr. T. R. Johns,

Professor and chairman of the department of neurology of the School of Medicine, University of Virginia, has been elected president of the Association of University Professors of Neurology.

Dr. Randolph H. Hoge,

Richmond, has recently been moderator in Hong Kong of a panel discussing Pap smears and contraceptive pills. He also participated in a panel on diseases of the female urethra.

Dr. T. Stacy Lloyd, Jr.,

Fredericksburg, has been re-elected to a second four-year term to the City Council.

Dr. William M. Eagles,

Richmond, was elected vice president of Kiwanis International at its recent meeting in Detroit. He has been a trustee of the organization.

Medical Staff Members.

Dr. Russell L. Davis has been elected chief of the medical staff of Radford Community Hospital, succeeding Dr. R. L. Robertson. Other officers are Dr. David B. Walthall, vice-chief, and Dr. Charles M. Graham, secretary-treasurer.

Tri-State Medical Association

Of the Carolinas and Virginia, held its annual meeting at Nags Head, North Carolina, June 14-17. Dr. John Wyatt Davis, Jr., Lynchburg, was again chairman of the meeting.

Dr. E. Reed Gaskin, Charlotte, North Carolina, succeeded to the presidency, and Dr. Clay T. Gardner, Richmond, was named president-elect and program chairman for the 1971 meeting to be held at Nags Head, June 13-16.

Southern Medical Association.

The 64th Annual Meeting of the Association will be held in Dallas, November 16-19. The four day meeting, with each of 21 specialty sections presenting its program, will focus upon new areas of medicine and scientific research. Outstanding specialists and medical leaders from many sections of

the country will gather to exchange knowledge, with over 300 speakers participating in the interdisciplinary programs.

Medical Seminar Cruise.

Georgetown University School of Medicine, Washington, D. C., announces that its fifth post-graduate medical seminar cruise will be to the Caribbean. The M.S. Europa will depart from New York on November 6th and return on the 19th.

Further information may be obtained from the Allen Travel Service, 565 Fifth Avenue, New York, New York 10017.

University Student Receives Fellowship.

Phillip Wood Catron, Roanoke, a fourth year medical student at the University of Virginia, is one of 29 American medical students selected to receive a Smith Kline and French Foreign Fellowship from the Association of American Medical Colleges. Mr. Catron and his wife left in August for Friends Hospital, Kaimosi, Kenya. Mrs. Catron received her degree in nursing from the University and will work in the hospital also.

Family Physician Needed

For the town of Shenandoah, Virginia. Population 1900 with 5,000 within a five mile radius. No full-time physician now in practice. Incentives are available with regard to office, housing and possibly equipment. For further details call or write Reverend Jimmy L. Bruce, Box 177, Shenandoah, Virginia 22849. Phone 652-8611. (*Adv.*)

Emergency Room Physician.

World's largest resort city seeks full time Emergency Department physician for 190-bed accredited general hospital providing a minimum guaranteed income expected to be exceeded the first year. This coastal Virginia city offers excellent living conditions and recreational facilities. Contact W. Earl Willis, Administrator, General Hospital of Virginia Beach, Virginia Beach, Virginia. (*Adv.*)

Internist, Opthalmologist, Surgeon Wanted

For new medical building in growing area near Alexandria, Virginia. Four floors, parking, and attractive setting. Contact Ben D. Wilmot, M.D., 1451 Belle Haven Road, Alexandria, Virginia 22307. (*Adv.*)

Physician Wanted.

Woodrow Wilson Rehabilitation Center needs a Medical Director. Regular 40-hour week, 12 days annual leave, 15 days sick leave and a Christmas vacation. Salary negotiable. If interested, contact James T. Taliaferro, Supervisor Medical Services, Woodrow Wilson Rehabilitation Center, Fishersville, Virginia 22939. Phone (703) 886-3437, Ext. 235. (*Adv.*)

Tired, Weary, No Time for Family or Fun?

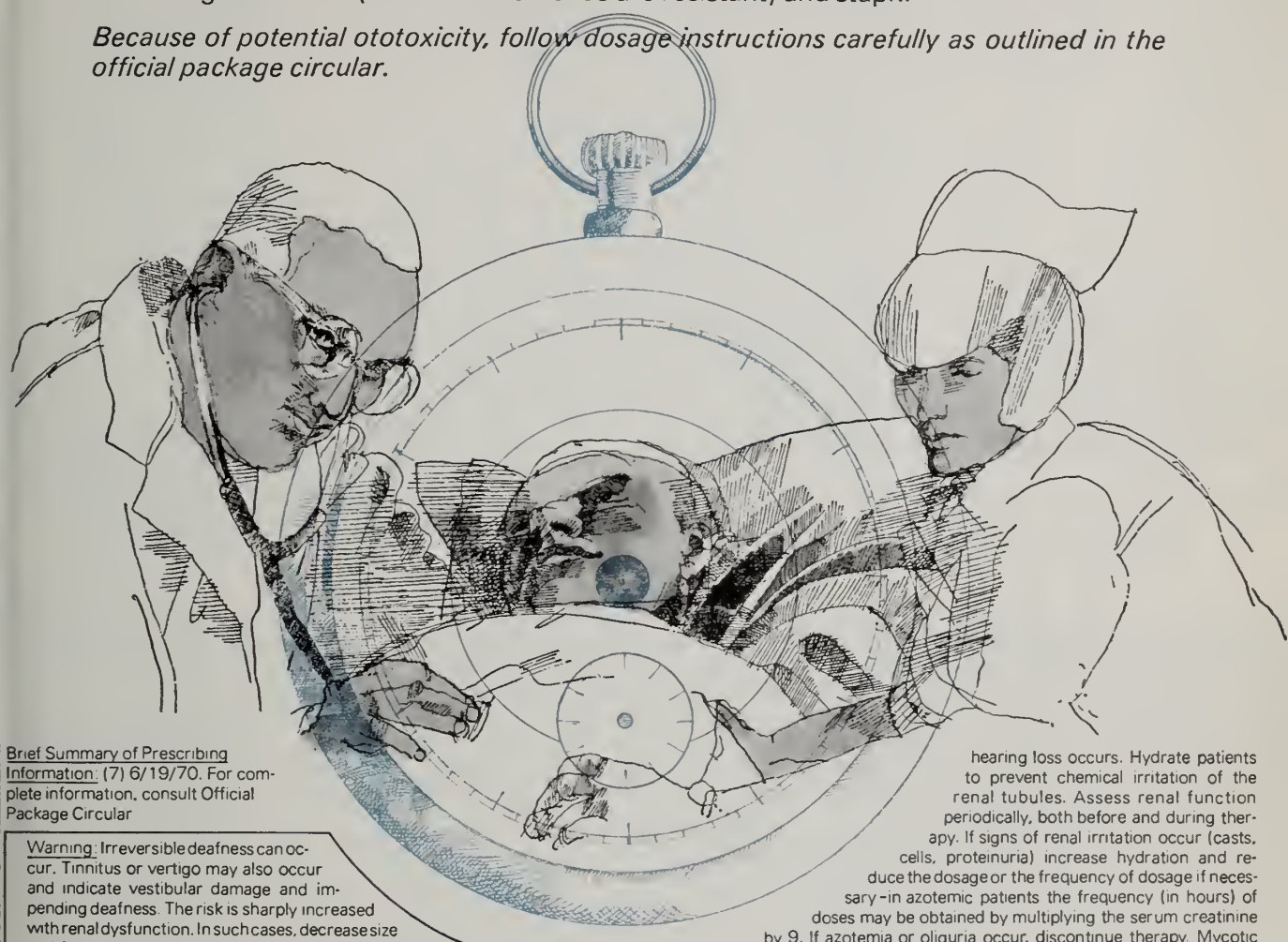
A lucrative group needs a qualified general practitioner who would like to live again. Out of every 28 day period you will have 14 days to enjoy life. For details, call collect 304-257-8216, Lysle T. Veach, M.D., 124 Pine Street, Petersburg, West Virginia 26847. (*Adv.*)

A valuable hospital antibiotic —when there is no time

in severe systemic infections—postoperative bacteremia, Gram-negative/staph pneumonias or neonatal sepsis—Kantrex® (kanamycin sulfate) is often indicated before results of customary sensitivity tests can be reported. Clinical response is often seen within 24-48 hours in susceptible infections, with remission soon after.

10 years of experience confirm the continuing effectiveness of Kantrex® against many Gram-negative bacilli (most Pseudomonas are resistant) and staph.

Because of potential ototoxicity, follow dosage instructions carefully as outlined in the official package circular.



Brief Summary of Prescribing Information: (7) 6/19/70. For complete information, consult Official Package Circular

Warning: Irreversible deafness can occur. Tinnitus or vertigo may also occur and indicate vestibular damage and impending deafness. The risk is sharply increased with renal dysfunction. In such cases, decrease size and frequency of doses. Discontinue kanamycin and check hearing if azotemia increases. Watch carefully for ototoxicity in older patients and patients receiving more than 15 Gm. of kanamycin. To avoid neuromuscular paralysis with respiratory depression, postpone intraperitoneal instillation in post-operative patients until recovery from anesthesia and muscle relaxants is complete. Avoid concurrent use of other ototoxic drugs including ethacrynic acid. Safety in pregnancy is not established.

Indications: Serious infections due to susceptible strains of *E. coli*, Proteus sp., *A. aerogenes, K. pneumoniae, Serratia marcescens* and *Mima-Herellea*. Culture and sensitivity studies should be performed.

Contraindications: A history of hypersensitivity to the drug. Prior auditory damage by kanamycin or other agents may be a contraindication if effective alternative therapy is available.

Precautions: Obtain audiograms before and during therapy in patients with renal dysfunction when treatment lasts more than 5 days. Stop Kantrex if tinnitus or hearing loss occurs. Hydrate patients to prevent chemical irritation of the renal tubules. Assess renal function periodically, both before and during therapy. If signs of renal irritation occur (casts, cells, proteinuria) increase hydration and reduce the dosage or the frequency of dosage if necessary -in azotemic patients the frequency (in hours) of doses may be obtained by multiplying the serum creatinine by 9. If azotemia or oliguria occur, discontinue therapy. Mycotic or bacterial superinfection may occur.

Adverse Reactions: Irritation or pain at the injection site, skin rash, drug fever, headache and paresthesias.

Dosage and Administration: The maximum total daily dose should not exceed 1.5 Gm. by all routes of administration. The usual dose is 7.5 mg./Kg./12 hours I.M. The average adult dose is 1 Gm. daily. Uncomplicated infections due to sensitive organisms should respond in 24 to 48 hours. If no response occurs in 3 to 5 days, stop therapy and recheck the bacterial sensitivities. Hydrate patients well to minimize renal irritation. Inject deeply into the upper outer quadrant of the gluteal muscle. Discard partially used vials after 48 hours. The drug should not be physically mixed with other antimicrobials.

Supplied: Rubber capped vials as a ready-to-use sterile aqueous solution in two concentrations: 0.5 Gm. in 2 ml. and 1.0 Gm. in 3 ml. Also available—Pediatric Injection 75 mg. in 2 ml. A.H.F.S. Category 8:12.28

BRISTOL LABORATORIES
BRISTOL Division of Bristol-Myers Company, Syracuse, New York 13201

KANTREX® INJECTION
(kanamycin sulfate)



Equipped for the thyroid emergency?

When an ambulance arrives with the unexpected patient presenting the classical picture of myxedema coma, is your hospital suitably equipped? It is if SYNTHROID® (sodium levothyroxine) injectable is at hand. You are also ready to conveniently handle post-operative thyroid medication situations until oral therapy can be reinstated.

In tablet form this single entity synthetic thyroid provides smooth, predictable response for thyroid replacement. An excellent drug for long-term therapy.

But in an emergency, when rapid replacement is needed to sustain life, prompt clinical response is essential. SYNTHROID injection makes this therapy instantly available. Is it available in your hospital?

Levothyroxine hos o high binding copacity for serum proteins in contrast to other thyroid medicaments that may contoin a thyroactive agent with low binding capacity. *The bound levothyroxine is totally measurable using the serum PBI test. It is not unusual to find PBI levels of 8-10 mcg. per 100 ml. of serum.*

INDICATIONS: SYNTHROID (sodium levothyroxine) INJECTION is specific replocement therapy for diminished or absent thyroid function resulting from primary or secondary atrophy of the gland, congenital defect, surgery, excessive radiotion, or antithyroid drugs. It is indicated in myxedematous comà and other thyroid dysfunctions where rapid replacement of the hormone is required. When o patient does not respond to oral therapy, SNYTHROID (sodium levothyroxine) INJECTION may be odministered intravenously.

PRECAUTIONS: As with other thyroid preparations, overdose may cause diarrhea or cramps, nervousness, tremors, tachycardia, insomnia and continued weight loss. These effects may become apparent in from 4 days to three weeks. Therefore, patients should be kept under close observotion. Medication, in such cases, should be stopped for 2 to 6 days, then resumed at a lower level. In patients with diabetes mellitus, look for possible changes in metabolic activity which may affect insulin or other antidiabetic drug dosage requirements.

CONTRAINDICATIONS: Thyrotoxicosis, acute myocardial infarction.

SIDE EFFECTS: Side effects are secondary to increased rates of body metabolism: sweating, heart palpitations with or without pain, leg cramps, weight loss, diarrhea, vomiting and nervousness. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. In most cases, a reduction in dosage followed by a more gradual adjustment upward will indicate the patient's dosoge requirements without the appearance of side effects.

DOSAGE AND ADMINISTRATION: In myxedematous stupor or como, with no evidence of severe heart disease, 200 to 400 mcg. of SYNTHROID (sodium levothyroxine) INJECTION may be administered intravenously utilizing o solution containing 100 mcg. per ml. Detectable effects are usually observed by the sixth hour after injection and are fully appreciated during the following day. A repeat injection of 100 to 200 mcg. may be given on the second day if significant improvement has not occurred. The intravenous use of sodium levothyroxine in myxedematous coma is advantageous because it produces a predictable increase in the concentration of protein-bound iodine, eliminates the need for multiple doses until oral therapy is reinstated, circumvents the uncertainty of oral absorption, and avoids the risk of pulmonary aspiration.

SUPPLIED: SYNTHROID (sodium levothyroxine) INJECTION is supplied in 10 ml. vials containing 500 mcg. of lyophilized active ingredient and 10 mg. of Mannitol, N.F.; a 5 ml. vial containing Sodium Chloride Injection, U.S.P. is provided as diluent.

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Obituary . . . .

Dr. Luther Randolph Stinson,

Scottsville, died June 3, following a heart attack. He was ninety years of age and a graduate of the Medical College of Virginia in 1900. Dr. Stinson began his practice in Scottsville in 1904 and retired in 1950. He served on the Town Council from 1915 to 1949. Dr. Stinson was a 50-year member of the Masonic Lodge and a member of the Albemarle-Charlottesville Chamber of Commerce. He had been a member of The Medical Society of Virginia for sixty-seven years.

His wife survives him.

Dr. Paul Davis,

Roanoke, died June 19, at the age of seventy-six. He was a graduate of the Medical College of Virginia in 1915 and began his practice in Roanoke the following year. Dr. Davis was in the service during World War I and received the French Medal of Honor. In 1919 he returned to Roanoke and became associated with Lewis-Gale Hospital. From 1927 to 1951 he served as president of the hospital board and was secretary and treasurer in later years. Dr. Davis had continued as a member of the board and with his practice until his recent illness. He had been a member of the Roanoke Kiwanis Club for nearly three decades. In 1964 Dr. Davis was elected an honorary deacon of the Baptist Church, this being one of the highest honors given by the Church. He had been a member of The Medical Society of Virginia for fifty-two years. He was a past president of the Roanoke Academy of Medicine.

His wife and three daughters survive him.

Dr. Raymond Cottrell Hooker,

Richmond, died June 30. He was seventy-nine years of age and a graduate of the Medical College of Virginia, class of 1912. Dr. Hooker had practiced in Richmond since 1913. He was a fifty year Mason and had been a member of The Medical Society of Virginia for thirty-five years.

His wife, a daughter, a stepdaughter and a son, Dr. Hooker, Jr., survive him.

Dr. Henry Bernard Showalter,

Kenbridge, died June 15 following a heart attack at his office. He was sixty years of age and had practiced in Kenbridge for thirty-five years. Dr. Showalter graduated from the Medical College of Virginia in 1933. Last year he was cited by the Chamber of Commerce as the town's outstanding citizen of the year. Dr. Showalter had been a member of The Medical Society of Virginia since 1934.

His wife, a daughter and two son survive him.

Dr. Thomas Uriah Vermillion,

Hampton, died May 28 at the age of fifty-eight. He was a graduate of the Medical College of Virginia in 1936. Dr. Vermillion had practiced in Hampton for the past fifteen years. He was a Mason and a Shriner and a member of the Lions Club. He had been a member of The Medical Society of Virginia for ten years.

His wife and two sons survive him.

Dr. Lupton.

Dr. Charles Hamilton Lupton expired April 24, 1970, at 76 years of age, after a prolonged illness. He was a native of Sealevel, North Carolina.

Dr. Lupton received his M.D. degree from the University of Maryland in 1916, following which he did post graduate work at Harvard Medical School, Cornell Medical College, New York Hospital Medical Center, New York Post-Graduate Medical School and Columbia University Medical School.

In his practice of surgery, he was affiliated with the Norfolk General Hospital, King's Daughters

Children's Hospital, and Norfolk Community Hospital.

He was a deacon of Freemason Street Baptist Church and a member of Corrinthian Masonic Lodge 266.

Dr. Lupton was a past president of the Norfolk Cosmopolitan Club, Rockhaven Corporation, North Thalia Civic League, Dale Carnegie Club, University of Maryland Alumni Association of Tidewater Virginia, and the Norfolk Surgical Journal Club and Norfolk Chamber of Commerce.

His medical affiliations included: Fellow of American College of Surgeons, Fellow of the International College of Surgeons, International Academy of Proctology, American Medical Association, University of Maryland Surgical Society, The Medical Society of Virginia, Norfolk County Medical Association, Southern Medical Associaion, Seaboard Medical Association, and the Tri-State Medical Association.

He was a first Lieutenant in World War I and a retired Commander from World War II.

Besides his wife, he is survived by two sons and a daughter.

Be it therefore resolved that the Norfolk County Medical Society express its respect to the memory of Dr. Charles H. Lupton and its sympathy to his family and make these resolutions a part of its permanent records; and, be it further resolved: that copies of these resolutions be sent to the Virginia Medical Monthly and to the immediate family.

Bernard Lidman, M.D.
M. Foscue Brock, M.D.
Gershon J. Levin, M.D., *Chairman*

Dr. Kelley.

Whereas, The Almighty in His infinite authority, has seen fit to remove from us our revered and beloved colleague, David Wright Kelly; and

Whereas, Doctor Kelly served his fellow man and his community freely, faithfully, without discrimination or reservation; and

Whereas, Doctor Kelly maintained his high level of professional knowledge and skills throughout his active practice; and

Whereas, Doctor Kelly exhibited unfavored interest, friendliness, and cooperation with his colleagues; Now therefore be it

Resolved, that the Culpeper County Medical Society and the Medical Staff of Culpeper Memorial Hospital express their grief and deep sense of loss by the death of Doctor Kelly; and be it further

Resolved, that copies of these resolutions be sent to the family as an expression of sympathy, and that copies be added to the minutes of the Culpeper County Medical Society and the Medical Staff of Culpeper Memorial Hospital, and forwarded to The Medical Society of Virginia and the American Medical Association.

George E. Broman, Jr., M.D.
President
Culpeper County Medical Society
Grahame F. Henson, M.D.
President
Medical Staff
Culpeper Memorial Hospital

Dr. Russo.

Dr. Augustin Joseph Russo died on March 21, 1970, following an acute myocardial infarction.

He was a Charter Member of The Portsmouth Academy of Medicine.

Dr. Russo was born on July 7, 1895, in Baltimore, Maryland. He attended the University of Richmond, and received his Medical Degree at Medical College of Virginia in 1920. His license to practice medicine was granted in 1921. From that time until his death he ably served his community in the practice of medicine.

Whereas his passing is a tremendous loss to the Academy and the community, because of the love and esteem he was held by his fellow physician, patients, and citizens of the community;

Be it resolved that the sympathy of the members of The Portsmouth Academy of Medicine be extended to the family of the late A. J. Russo, M.D., and

That copies of this resolution be sent to the family of Doctor A. J. Russo, and a copy be spread upon the minutes of this meeting.

H. J. Breit, M.D.

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†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa*, and species of indole-positive and indole-negative *Proteus, Escherichia coli,* and *Klebsiella-Aerobacter.* Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa,* 828 (93%); *Escherichia coli,* 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: GARAMYCIN Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with pre-existing renal damage, treated with GARAMYCIN Injectable, usually for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with pre-existing renal impairment. Kidney function diminished by infection of the upper urinary tract may, however, improve during effective treatment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs such as streptomycin and kanamycin or of potentially nephrotoxic drugs such as polymyxin, colistin, and kanamycin with gentamicin sulfate has not been shown to afford any clinical advantages and, moreover may result in additive toxicity. Monitoring of vestibular, cochlear, and renal function will provide guidance for therapy in such cases.

Precautions: In patients with impaired renal function in whom serious infection develops, serum concentrations of the drug may rise, with consequently increased risk of ototoxicity. In these patients or in those in whom recommended dosage or duration of therapy must be exceeded as a life-saving measure, routine studies of kidney function should be performed when possible. These may be supplemented by evaluation of the vestibular and auditory function and measurement of serum concentration of the drug when feasible. Serum concentrations of gentamicin should be maintained below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to 10 days or be repeated unless required for serious infection not responsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Injectable may occasionally result in overgrowth of nonsensitive organisms. If superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity or nephrotoxicity have not been established. Studies in pregnant animals have not revealed teratogenic or ototoxic effects in the fetus. GARAMYCIN Injectable should not be used in pregnant patients or in women of childbearing age unless its use is deemed advisable by the physician.

Adverse Reactions: The overall incidence of ototoxicity considered related to treatment with GARAMYCIN Injectable was 2.8 per cent (16 of 565 patients). Contributory factors (two or more factors were relevant to most patients) were as follows: 10 had azotemia, 1 received a total of 1 gram or more of the drug, 7 had recently received other potentially ototoxic antibiotics (streptomycin or kanamycin), and 5 were over 60 years of age. Six also had decreased high-tone hearing acuity, which returned to or toward normal in the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients showed increases in BUN that were probably related to treatment with GARAMYCIN Injectable. Of 20 increases probably or possibly related to treatment, 7 were reversible, 9 occurred in terminal patients, and 4 had no follow-up.

Other adverse reactions associated with treatment were one instance each of urticaria, decreased hematocrit, and reversible depression of granulocytes with normal bone marrow. Other rarely reported and possibly treatment-related adverse reactions were anemia, increased reticulocyte count, rash, purpura, drug fever, hypotension, convulsions, twitching, salivation, nausea, vomiting, increased transaminase activity (SGOT or SGPT), increased serum bilirubin, decreased serum calcium, and joint pain.

Packaging: GARAMYCIN Injectable, 40 mg./cc., 2-cc. multiple-dose vials, for intramuscular administration.

For more complete prescribing details, consult package insert in Physicians' Desk Reference. Schering literature is also available from your Schering Representative or Medical Services Department, Schering Corporation, Union, New Jersey 07083.

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VIRGINIA MEDICAL MONTHLY

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PROGRAM ISSUE

Does the antianxiety agent you now prescribe...

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Precautions: Exercise caution in moderate to severe hepati disease. Elderly or debilitated patients may react wit marked excitement or depression.
Adverse Reactions: Drowsiness at daytime sedative dos levels, skin rashes, "hangover" and systemic disturbance are seldom seen.
Warning: May be habit forming.
Usual Adult Dosage: For daytime sedation, 15 mg. to 3 mg. t.i.d. or q.i.d. For hypnosis, 50 mg. to 100 mg.
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*Based on surveys of average daily prescription costs.

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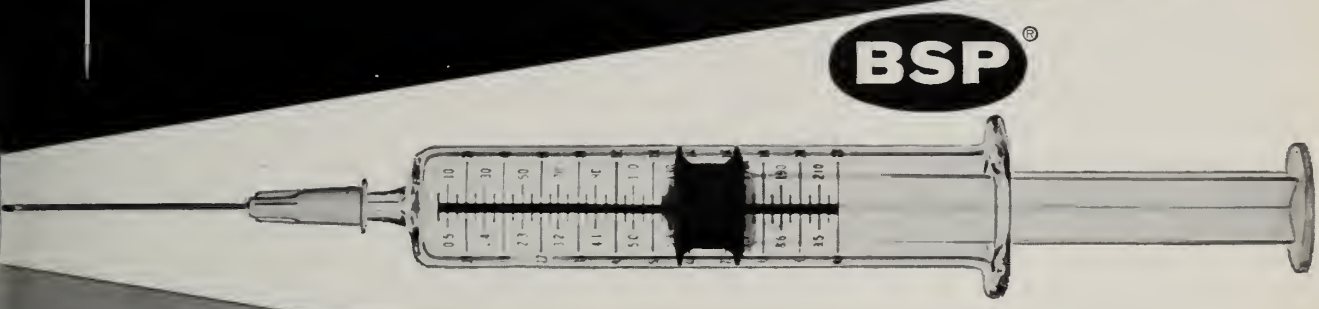
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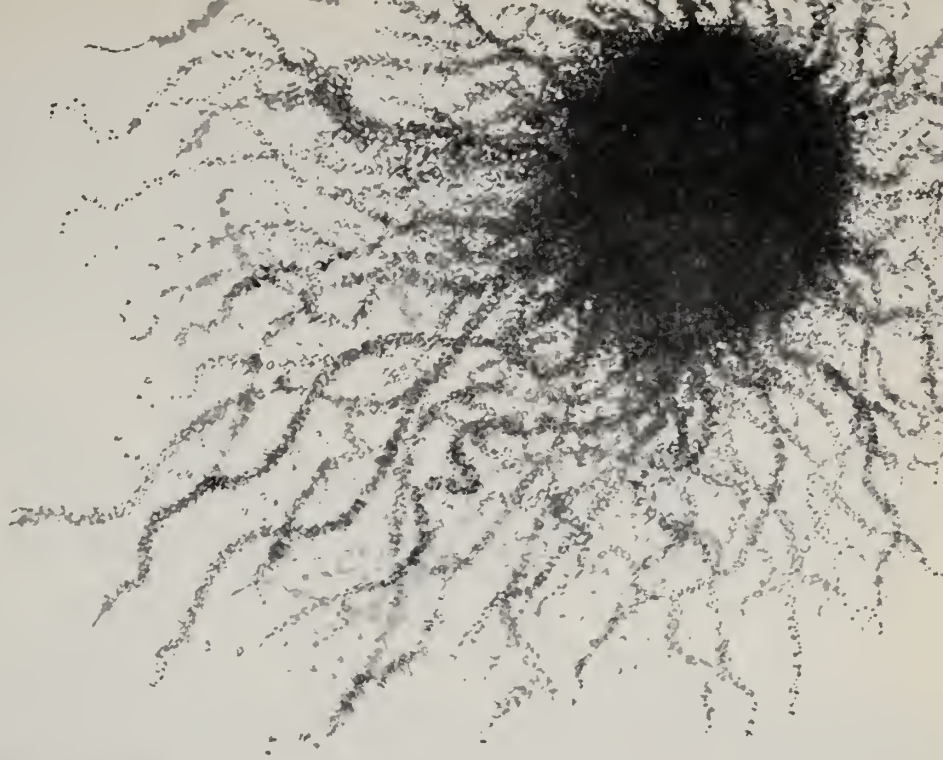
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then antibiotic therapy last week.

and monilial overgrowth this week.

For many patients on long-term corticosteroid therapy, the addition of oral antibiotic therapy may trigger monilial overgrowth in the intestine. When you anticipate such a problem, take action with DECLOSTATIN 300. It combines the broad-spectrum potency of demethylchlortetracycline with the antifungal effectiveness of nystatin—it helps avoid monilial take-over. Experience has shown DECLOSTATIN to be highly useful for many women patients; individual culture studies will show exactly where this usefulness may best be applied.

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Contraindication: History of hypersensitivity to demethylchlortetracycline or nystatin.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

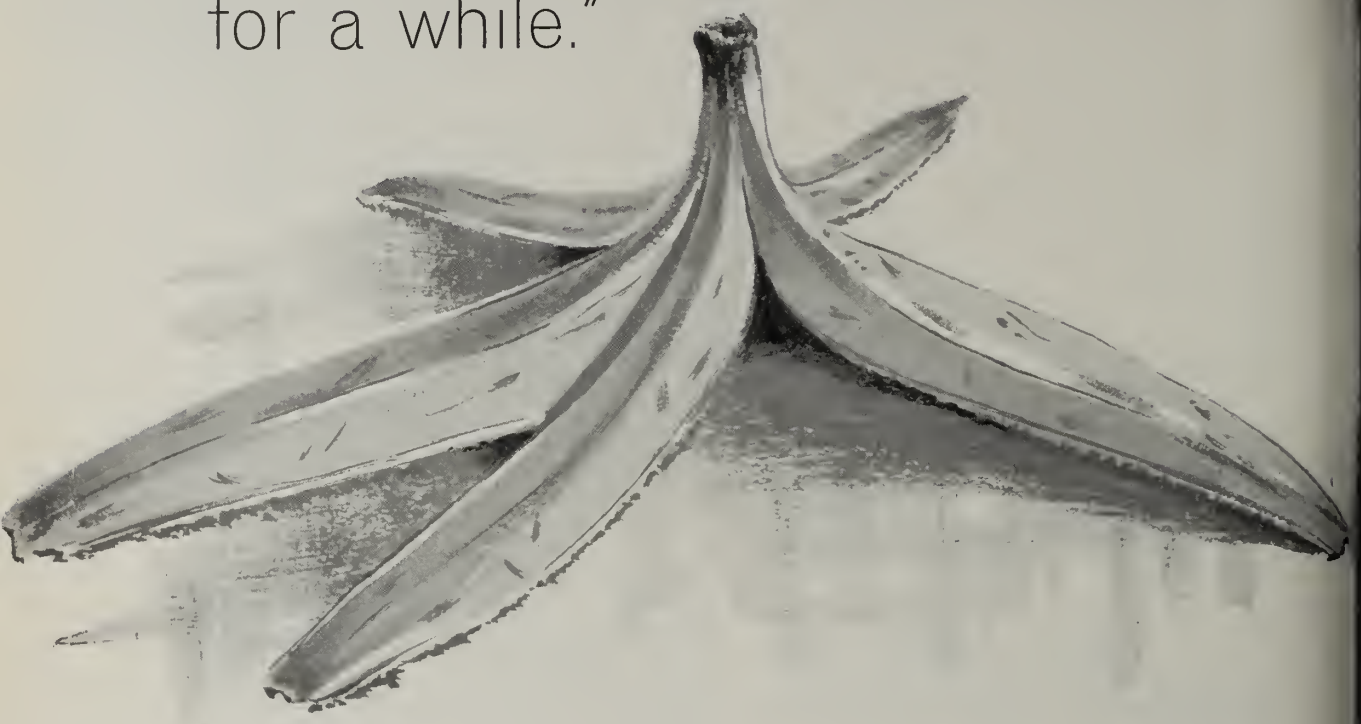
Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity, onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: One tablet b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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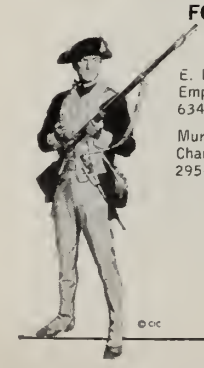
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hould avoid direct exposure to sunlight
hile under treatment. Discontinue drug
t first evidence of skin discomfort.
recautions: Use may result in
vergrowth of nonsusceptible organisms.
Constant observation is essential. If new infections appear, take appropriate measures. Use of tetracycline during teeth development may cause discoloration of teeth.
Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes (a case of exfoliative dermatitis has been reported); photosensitivity reaction, onycholysis and discoloration of nails (rare). Kidney—rise in BUN, apparently dose-related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. In young infants, bulging fontanels have been reported following full therapeutic dosage. This symptom has disappeared rapidly when drug is discontinued. Teeth—dental staining (yellow-brown) in children of mothers given tetracycline during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. Blood—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. Liver—cholestasis (rare), usually at high dosage. Tetracycline may form a stable calcium complex in bone-forming tissue. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy.
Average Adult Daily Dosage: One Gm. per day, in 4 divided doses of 250 mg. each. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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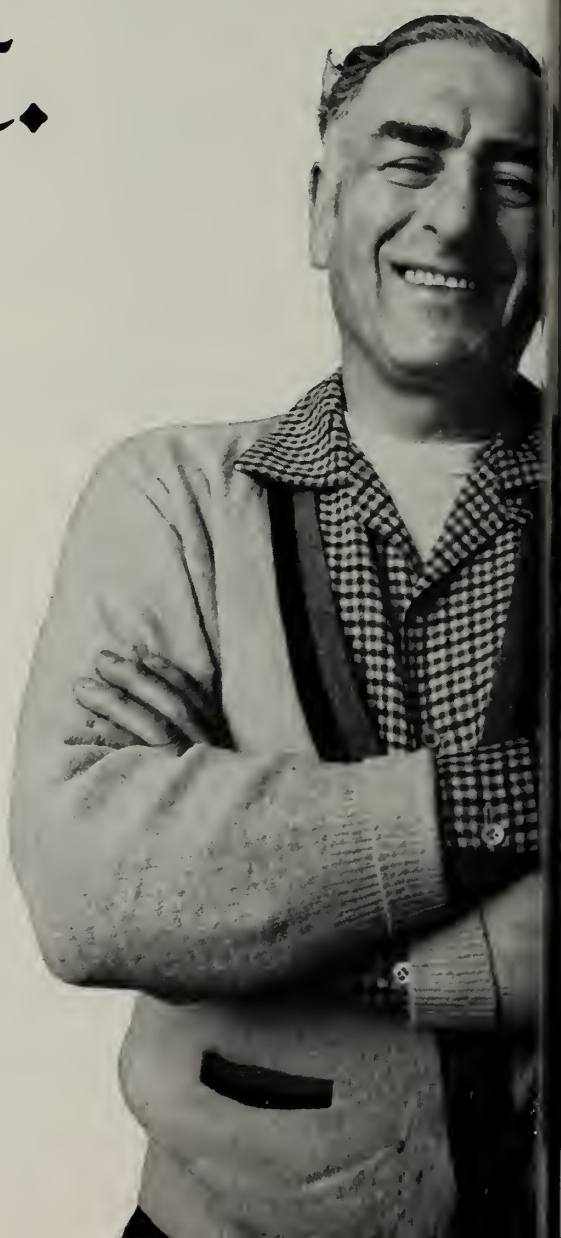
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Indications: Management of manifestations generally associated with the menopausal syndrome—anxiety and tension, vasomotor complaints and hormonal deficiency states.

Contraindications: Women with cancer of breast or genitalia, except inoperable cases, and those with known hypersensitivity to chlordiazepoxide and/or esterified estrogens.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Exclude other possible causes of menopausal syndrome manifestations, such as pregnancy. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) similar to those seen with barbiturates have been reported following discontinuance of chlordiazepoxide HCl. Potential benefits of use in pregnancy, lactation or women of childbearing age should be weighed against possible hazards to mother and child. Clinical data inadequate on safety in pregnancy.

Precautions: In elderly and debilitated patients, limit dosage to smallest effective amount of chlordiazepoxide (initially 10 mg or less per day) to preclude ataxia or oversedation; increase gradually as needed and tolerated. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects—particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in patients with impaired renal or hepatic function. Paradoxical reactions to chlordiazepoxide (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in the treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation very rarely reported in patients receiving Librium® (chlordiazepoxide) and oral anticoagulants.

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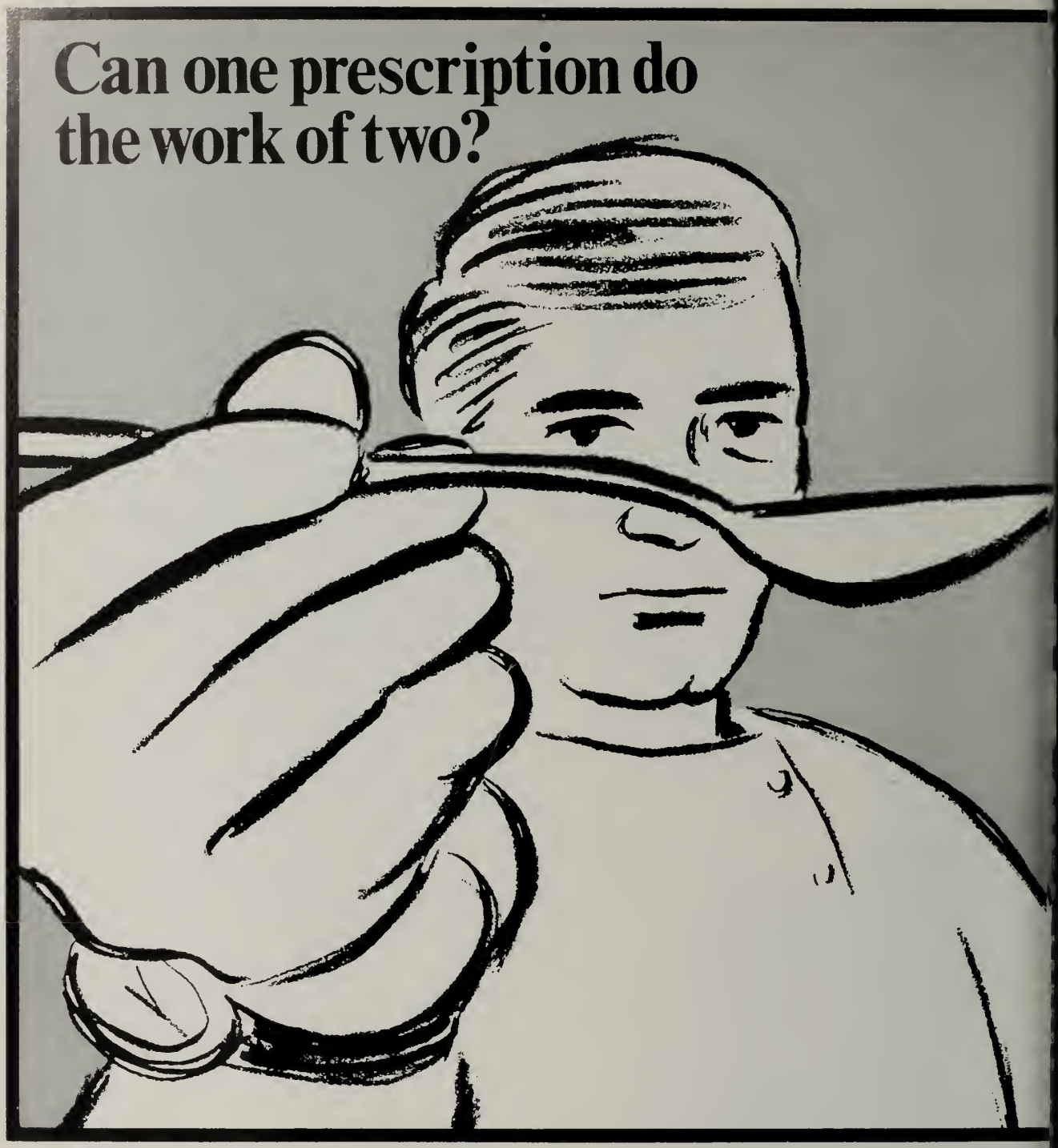
With estrogens, headache, nausea and vomiting, anorexia, gastrointestinal discomfort, dysuria and urinary frequency, jitteriness, breast engorgement, formation of breast cysts, skin rashes and pruritus occasionally seen. Administration may also be associated with uterine bleeding and/or followed by withdrawal bleeding.

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PRECAUTIONS: As with other thyroid preparations, overdose moy cause diarrheo or cramps, nervousness, tremors, tochycordio, insomnia and continued weight loss. These effects moy become opparent in from 4 doys to three weeks. Therefore, patients should be kept under close observotion. Medicotion, in such cases, should be stopped for 2 to 6 days, then resumed ot o lower level. In potients with diabetes mellitus, look for possible chonges in metabolic octivity which moy offect insulin or other antidiobetic drug dosage requirements.

CONTRAINDICATIONS: Thyrotoxicosis, ocute myocardiol inforction.

SIDE EFFECTS: Side effects ore secondory to increosed rates of body metabolism: sweating, heart polpitotions with or without poin, leg cromps, weight loss, diarrheo, vomiting and nervousness. Myxedematous patients with heort disease hove died from obrupt increoses in dosoge of thyroid drugs. In most coses, o reduction in dosage followed by o more graduol adjustment upword will indicate the potient's dosoge requirements without the oppeorance of side effects.

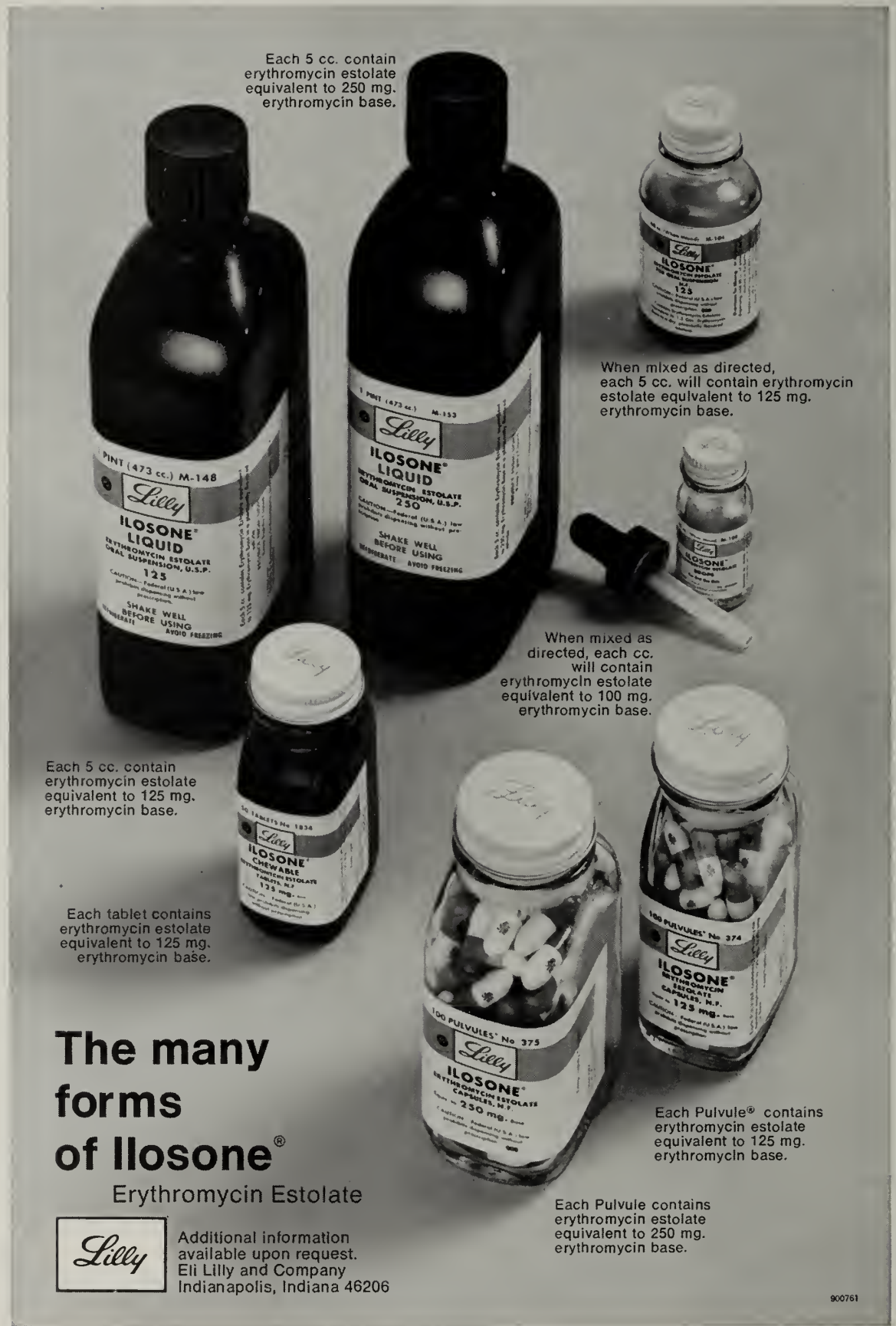
DOSAGE AND ADMINISTRATION: In myxedemotous stupor or como, with no evidence of severe heort diseose, 200 to 400 mcg. of SYNTHROID (sodium levothyroxine) INJECTION may be administered introvenously utilizing a solution containing 100 mcg. per ml. Detectoble effects are usually observed by the sixth hour after injection ond ore fully oppreciated during the following day. A repeat injection of 100 to 200 mcg. may be given on the second doy if significont improvement has not occurred. The introvenous use of sodium levothyroxine in myxedematous como is odvontageous becouse it produces a predictable increase in the concentration of protein-bound iodine, eliminotes the need for multiple doses until orol therapy is reinstated, circumvents the uncertainty of orol obsorption, ond avoids the risk of pulmonary aspiration.

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The Virginia
MEDICAL MONTHLY

September, 1970
Vol. 97, No. 9
Whole No. 1420

Guest Editorial . . . .

"Let's See"

THE HUMAN EYES have been poetically described by Dubartas as "The Windows of the Soul". The poet Milton, who himself was blind, expressed his feeling in these lines:

> "O dark, dark, dark, amid the blaze of noon,
> Irrecoverably dark! Total eclipse, without all hope of day."

The eyes of 850 Virginians are statistically scheduled to become blinded during the coming year. If the knowledge we already have is consistently applied, the vision of more than one-half of these could be saved. Furthermore, thousands could be saved from varying degrees of visual impairment.

To this end, the Virginia Society for the Prevention of Blindness has begun its annual sight saving campaign for the purpose of public education and fund raising. Voluntary contributions are the Society's only source of income and contributions are tax deductible. Funds will be used to further the VSPB's programs:

1. Training and guiding volunteers in preschool vision screening
2. Conducting community glaucoma screening programs and encouraging glaucoma screening in general practitioners' offices, hospitals and on industrial sites
3. Promoting the use of safety eyewear in shop and laboratory classes
4. Encouraging adequate school eye health and safety programs
5. Educating the public to the importance of safety lenses in all eyewear
6. Educating the public to the dangers of aerosol sprays, household cleaning agents (especially those containing sodium hydroxide) and many other overlooked and poorly marked products in general use
7. Promoting safe toys for children
8. Encouraging safety through regulating and education on the use of B-B guns and the restriction of fireworks to public displays
9. Promoting industrial eye health and safety through encouraging the proper use of eye protection, screening for vision needed on the job and early detection of eye problems
10. Public education concerning eye abnormalities and disease, general eye health and safety
11. Professional education
12. Research grants

Of particular concern during the coming year is the need for legislation on safety glasses. A survey of the ophthalmologists in the state showed that in 1969 there were 76 eye injuries, five losses of vision and one enucleation due to broken glasses. As a definite preventive measure, the 1971 General Assembly will be urged to pass legislation providing that shatter-resistant glass or plastic lenses and non-flammable eye glass frames be universal throughout the State unless otherwise prescribed by the examiner. The last phrase appears in a model law drawn up as a result of a meeting called by the optical manufacturers throughout the country and attended by representatives of all national ophthalmic and optometric interests. The Virginia Society of Ophthalmology and Otolaryngology voted at its 1970 meeting to support such legislation.

In addition, emphasis will be placed on legislation controlling the sale and use of "common" or Class C fireworks (small firecrackers, sparklers, fountains, Roman candles, rockets, etc., all of which are still allowed by law in 24 states and the District of Columbia). This means of "celebration" caused 557 injuries and one fatality in 1969. 175 of these were eye injuries, including 16 persons who lost vision in one or both eyes. These statistics are a result of a survey conducted by the National Society for the Prevention of Blindness, the National Fire Protection Association, and the Fire Marshals Association.

The work of the Virginia Society is carried out by a volunteer board of directors comprised of doctors and laymen, a medical advisory committee, five permanent staff members and countless volunteers. The VSPB programs are often sponsored by civic groups in the various communities throughout the State. All programs are under close medical supervision as the Society works in cooperation with State and local public health and education departments as well as medical societies.

Publications, posters, films, lectures and advisory services are available to any interested persons or group upon request.

As an affiliate of the 61-year-old National Society for the Prevention of Blindness, Inc., the Virginia Society, with headquarters at the Jefferson Hotel, in Richmond, joins in the national campaign with Bing Crosby as 1970 National Sight Saving Chairman.

In the past few years the State Society has shown phenomenal growth. It needs $84,000 to carry on its minimal responsibilities for the coming year.

The preservation of useful vision is of prime importance to us all—as physicians, as parents and as concerned human beings. The Virginia Society for the Prevention of Blindness needs and deserves our wholehearted *support.*

M. K. Humphries, Jr., M.D.

Dr. Humphries is Chairman, Department of Ophthalmology, University of Virginia Medical Center, Charlottesville. He is 1970 Sight Saving Chairman and Medical Advisory Committee Chairman for the V.S.P.B.

Private Practice Must Be Preserved

DURING RECENT WEEKS we have seen on television and in some news publications that medicine and medical care is in a state of crisis. The profession would be the first to say that problems exist in many quarters, also to state that certain changes in modern life and medicine will occur. True progress or change for the better is what the profession seeks.

A look at the present situation reveals that advocates of "National Health Insurance" stipulate that the patient-physician relationship has now become a socio-economic problem which must be solved by some bureaucratic process. Clearly stated, the physician and patient would be required to eliminate fee for service and free choice. Doctors would work on a controlled salary basis, diagnoses and treatments would be subject to inspection by lay boards. Physicians who rejected such methods would be required to meet a standard of re-licensure to force compliance. Suffice it to say, such methods could prove disastrous to the private practice of medicine.

Politicians and the general public are not truly conversant with the problems of clinical medicine nor do they truly understand our function. As a classic example, lay persons in many instances do not realize that we have had and do require high standards of performance in every field of clinical medicine.

It would not be true to indicate that all governmental influence or help is without merit in every facet of medicine, but should we fall or not fall more deeply into the squalor of socialism will depend upon us. If we fail to show the leaders of our nation the reasons why the American system of private practice is truly the best in the world, we will lose by default.

How can I accomplish such a task and take care of my practice, you will ask? You can take an active step by directing your attention to an important national medical organization founded in 1943 which has as its primary objective the preservation of quality medical care for the American people through private practice.

An *Institute for Private Practice* under the direction of the Association of American Physicians and Surgeons, is to be held in Richmond, September 30-October 3, 1970. At this twenty-seventh annual meeting the program represents a major first in American medicine and will deal with a tangible approach to how we can make ourselves more effective in our practices and in methods to counteract outside interferences and how our cause can be promoted by telling the truth, which is on our side.

Your support, membership, and participation in AAPS are earnestly invited.

WILLIAM RUSSELL JONES, JR., M.D.

411 West Grace Street
Richmond, Virginia 23219

Spontaneous External Biliary Fistula

CLAIBORNE W. FITCHETT, M.D.
Norfolk, Virginia

"Gallstones have been vomited from the stomach, coughed up from the bronchial tree, voided in the urine and frequently passed per rectum. Fistulous tracts have been found between the gallbladder and the stomach, duodenum, jejunum, ileum, colon and appendix; between the gallbladder, the common and hepatic ducts, and the liver. They have been traced to the pelvis of the kidney, the urachus, the urinary bladder and the sex organs. Extreme rarities are connections with the pericardial cavity, the pregnant uterus and an ovarian cyst. . . ."—Chancey N. Borman and Leo G. Rigler, 1937.

IN THIS QUOTATION from the classic article by Borman and Rigler[2] on Internal Biliary Fistula, no mention is made of the extreme rarity of spontaneous external biliary fistula. Rankin, Sherman and Bourland[21] noted the extreme rarity of this condition in 1942.

Spontaneous external biliary fistula may be defined as a rupture of the gallbladder through all layers of the abdominal wall with the formation of a fistulous tract. This condition is not preceded by biliary tract surgery or trauma. It is a complication of suppurative disease of the gallbladder usually with cholelithiasis. The disease is also referred to as empyema necessitatis of the gallbladder[17] or cutaneous biliary fistula.[1]

Pathology

Certain authors[10] have postulated that the inflamed gallbladder becomes adherent to the abdominal wall and a perforation occurs at the point of contact. An abscess then forms within the abdominal wall which ruptures through the skin. This establishes a fistula which discharges pus, bile and perhaps gallstones. This concept ignores several basic changes that occur in suppurative cholecystitis. First, there is obstruction to the bile ducts, usually the cystic duct, causing stasis within the gallbladder and a rise of pressure in the gallbladder. This promotes the growth of bacteria within the gallbladder with a further increase in intracholecystic pressure and distention of the gallbladder. As the pressure rises and the wall of the gallbladder stretches, the blood and lymph supply to the gallbladder becomes impaired and areas of necrosis appear. Perforation occurs in an area of necrosis or gangrene. The body attempts to prevent the necrosis by surrounding the gallbladder with inflamed omentum, mesentery and viscera. The gallbladder is less likely to rupture at a site where it is adherent to another structure. Therefore, when the gallbladder perforates through an area of gangrene, the result is either a generalized bile peritonitis or a localized cholecystic abscess (fig. 1). The abscess may resolve, perforate into an

TABLE I

CLASSIFICATION OF BILIARY FISTULAS (AFTER DIERCKX).

I. Anatomical—Pathology.
  A. Spontaneous
    1. External
    2. Internal
      Bilio-digestive
      Bilio-biliary
    3. Mixed
  B. Postoperative

II. Etiology
  A. Gallstones
  B. Peptic ulcers
  C. Cancer
  D. Traumatic—postoperative
  E. Parenchymatous
  F. Other rare causes

adjacent viscus, or penetrate the abdominal wall. The abdominal wall, with its excellent blood supply, is the least likely location

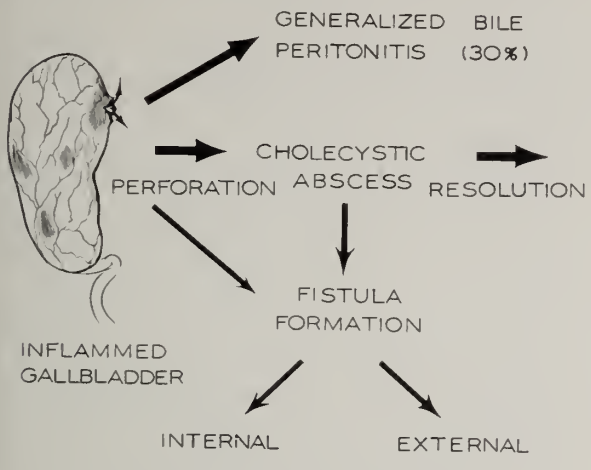


Fig. 1. Perforation of the Gallbladder.

for the perforation to occur. This explains the rarity of this complication.

Physiology of the Fistula

What are the effects of the fistula? Primarily, it provides drainage for the intra-abdominal abscess and may allow the passage of a few gallstones. As the acute inflammation subsides, the drainage from the fistula changes from pus to either bile or mucus depending upon the nature of the disease in the gallbladder. Should the cystic duct remain obstructed, only mucus will drain and the patient may "get well". If the cystic duct is open and the common bile duct blocked, a serious situation arises. All the bile drains externally causing depletion of body fluids and electrolytes. If both the cystic duct and the common duct remain open, the fistula would drain mucus and bile intermittently. After ingestion of food, the fistula drains more bile than in a fasting state.

Treatment

The treatment of external biliary fistula depends upon the time of diagnosis and the underlying pathology. In the acute stage of the fistula, antibiotics and general supportive measures are sufficient. Adequate drainage through the cutaneous opening of

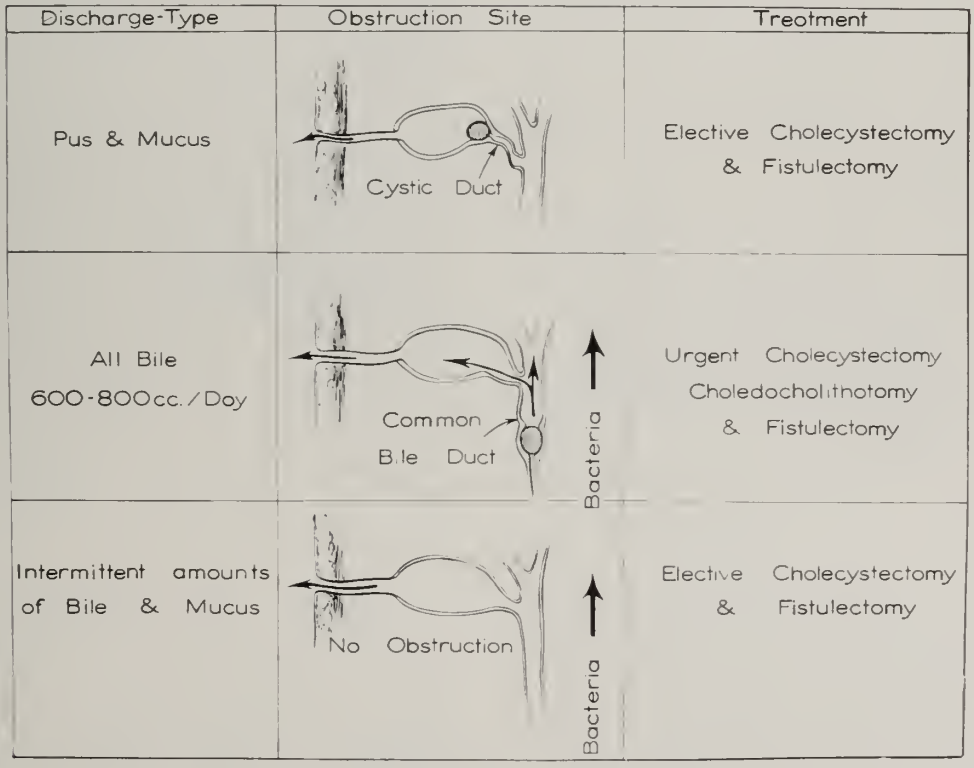


Fig. 2. Treatment of external biliary fistula.

the fistula is mandatory. Insertion of a drain suction may be necessary.

Once the purulent drainage subsides it is important to note the amount and type of drainage (fig. 2). If there is copious bile drainage, a complete biliary fistula is present and correction becomes urgent. Removal of the diseased gallbladder and relief of the common bile duct obstruction should be done as soon as possible. Since this operation must be performed under adverse conditions, preoperative fistulograms and operative cholangiography are helpful.

If the drainage from the fistula consists of only mucus or of mucus and small amounts of bile, elective cholecystectomy with excision of the fistula may be done after a suitable interval.

The elderly, debilitated patient may be treated conservatively and surgery deferred, depending on symptoms.

Report of a Case

Mrs. I. J. S., age 78, suffered a stroke in January 1967 resulting in a right hemiplegia and she was admitted to an extended care facility. On 11 December 1967, a large abscess on her abdominal wall was discovered. She was transferred to the Norfolk General Hospital.

Past medical history revealed she had a subtotal gastrectomy in 1957 for duodenal ulcer with hemorrhage. A normal gallbladder was described.

Physical exam revealed a semicomatose, elderly, white female who appeared acutely ill. Her temperature was 38.8° C., pulse rate 90 per minute and blood pressure 140/80. She had a right hemiplegia with flexion contractures of the right hip and knee. There was a large mid-abdominal abscess adjacent to an old left paramedian surgical scar. The abscess was draining large amounts of green, foul smelling pus. The liver and spleen could not be palpated. Her white blood count was 21,800 and hematocrit was 35 mm. Urinalysis revealed albuminuria and pyuria. The serum bilirubin and prothrombin time were normal.

After admission, a suction catheter was used to "clean up" the abscess and during this procedure five stones were expelled through the abscess. They were analyzed as mixed cholesterol, bilirubin, and biliverdin stones.

Initial treatment consisted of intravenous fluids, chloramphenicol and sedation. The morning after admission, the patient appeared greatly improved. The drainage from the abscess continued and appeared to contain bile mixed with pus. During the next three days, the drainage decreased in amount and became clear bile. On her fifth hospital day, she experienced respiratory distress and went into acute pulmonary edema. This complication was treated with oxygen, digitalis and diuretics with improvement. On December 17, 1967, a fistulogram (fig. 3) demonstrated a long fistula tract extending into the gallbladder.

The following day her cardiac condition became worse and she became comatose. Despite resuscitative measures, she died.

Autopsy findings confirmed the fistula connecting the abscess to the gallbladder (fig. 4). The abscess cavity was located within the fascial planes of the epigastrium and measured eleven by eight centimeters. It was lined by dense fibrous connective tissue and filled with bile stained exudate. This cavity communicated with the cutaneous fistula and to a thickened gallbladder. The gallbladder contained a sparse quantity of non-mucoid bile and twenty-five pigmented calculi. Similar calculi were present in the cystic duct and within the thick walled, dilated common bile duct. The liver showed a minimum of portal fibrosis.

Review of the Literature

The first case of biliary fistula due to perforation of gallstones through the abdominal wall is credited to Thilesus in 1670.[22] In 1890, Courvoisier[5] published a collection of 499 cases of perforation of the gallblad-

der, 169 of which were listed as spontaneous fistulas through the abdominal wall. In 1896, Naunyn[16] listed 184 external or cutaneous fistulas in his series of 384 spontaneous biliary fistulas due to cholelithiasis. Bonnet[1] in 1897 reported a collected series of 122 cases of external biliary fistula.

Prior to the twentieth century, spontaneous external biliary fistula was much more common than it is today. In 1949, Henry and Orr[10] reported a collected series of only 37 cases. They commented on the marked reduction of this complication of biliary tract disease. They stated that the advent of surgical treatment for cholecystitis has reduced the incidence of such complications as suppuration and empyema of the gallbladder and subsequent development of perforation and fistula formation.



Fig. 3. Fistulogram showing dye entering the gallbladder.

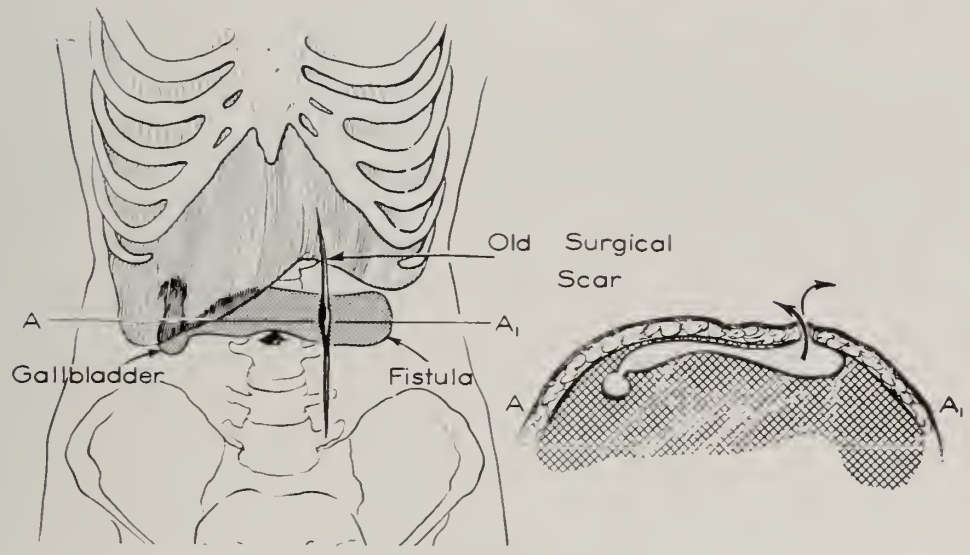


Fig. 4. Diagram of fistula as found at autopsy.

This review of the literature starts in

TABLE II

	Author	Year	Age	Sex	Location	Calculi	Colic	Treatment
1.	Ferreira (8)	1950	52	F	Infra-umbilical	Yes	No	Cholecystectomy-Fistulectomy—E. C. D.
2.	Verduyn (23)	1950	63	F	Rt. Lumbar	Yes	No	Cholecystectomy
3.	Dierckx (6)	1952	51	F	Rt. Hypochondrium	Yes	No	Cholecystectomy-Fistulectomy
4.	Dierckx	1952	68	M	Rt. Hypochondrium	Yes	No	Cholecystectomy-Fistulectomy
5.	Dierckx	1952	73	M	Rt. Hypochondrium	Yes	No	Cholecystectomy-Fistulectomy
6.	Dierckx	1952	63	F	Rt. Lumbar	Yes	No	Cholecystectomy
7.	Drassdo (7)	1953	71	F	Costal Margin	Yes	Yes	Cholecystectomy—E. D. D.—Died
8.	Griffin (9)	1956	66	F	Rt. Upper Quad.	No	No	No surgery
9.	Lupi (14)	1956	56	M	Rt. Upper Quad.	Yes	No	Cholecystectomy-Fistulectomy—E. C. D.
10.	Calvet (3)	1961	62	F	Rt. Hypochondrium	Yes	Yes	Cholecystectomy
11.	Calvet	1961	60	M	Rt. Abdomen	Yes	No	Cholecystectomy
12.	Calvet	1961	..	F	Epigastrium	Yes	No	Cholecystectomy-Fistulectomy
13.	Logie (13)	1961	57	F	Abdominal Wall-Liver	Yes	No	Cholecystectomy
14.	Hulten (12)	1962	73	F	Right Flank	Yes	Yes	Cholecystectomy-Fistulectomy
15.	Hulten	1962	77	F	Right Lumbar	Yes	Yes	I. & D. Fistula
16.	Hulten	1962	84	F	Epigastrium	Yes	Yes	I. & D. Fistula
17.	Mouchet (15)	1963	84	F	Below Umbilicus	Yes	No	Cholecystectomy-Fistulectomy
18.	Mouchet	1963	65	F	Rt. Hypochondrium	Yes	Yes	Cholecystectomy-Fistulectomy—E. C. D.
19.	Nayman (17)	1963	50	F	Rt. Lower Quad.	Yes	Yes	Cholecystectomy-Fistulectomy
20.	Neudaurer (19)	1964	56	F	Umbilicus	Yes	Yes	Antibiotics
21.	Panisic (20)	1964	41	F	Rt. 10th Interspace	Yes	Yes	Resection of Rib—Extraction of Stones
22.	Calvo (4)	1965	40	M	Rt. Upper Quad.	Yes	No	Cholecystectomy-Fistulectomy
23.	Nechiporuk (18)	1965	66	F	Epigastrium	Yes	Yes	Cholecystectomy-Fistulectomy—E. C. D.
24.	Nechiporuk	1965	52	F	Rt. Upper Quad.	Yes	Yes	Cholecystectomy-Fistulectomy
25.	Fitchett	1968	78	F	Lt. Upper Quad.	Yes	No	Antibiotics—Died—Cardiac

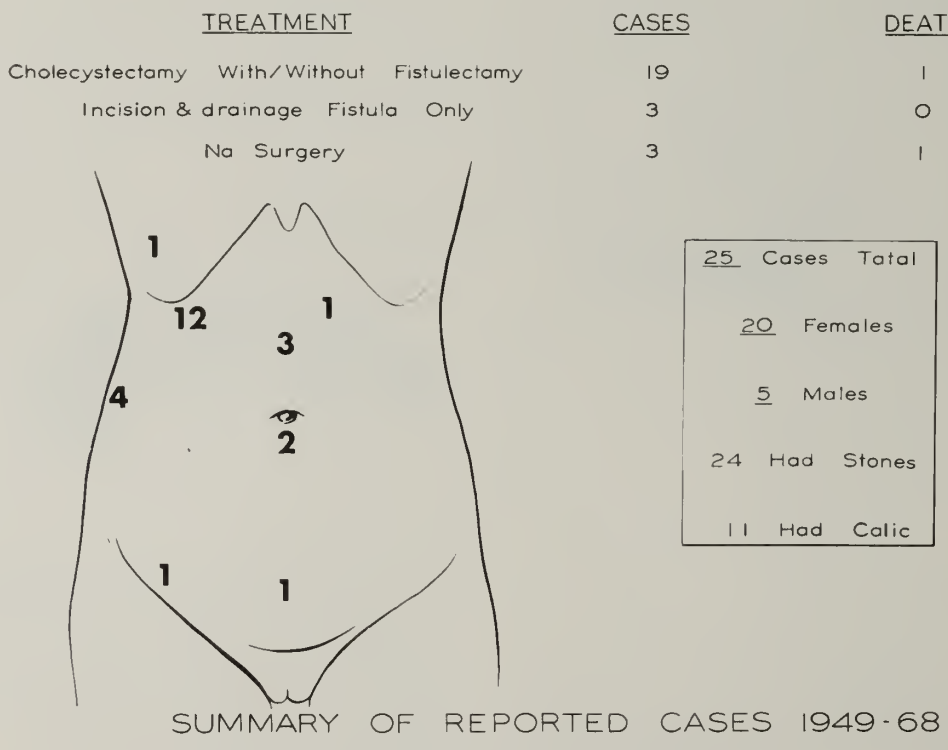


Fig. 5. Summary of reported cases of spontaneous biliary fistula. Numbers indicate anatomical location of external openings.

1949 where Henry and Orr[10] concluded. (See Table II). Including the present case report, only twenty-five cases have been recorded. Many of these were reported in the foreign literature.

Twenty cases occurred in females (fig. 5) which reflects the higher incidence of cholecystitis in women. Twelve of the fistulas had external openings in the right upper quadrant or right hypochondrium. The other thirteen fistulas were in a variety of positions about the abdomen and lower chest. Only one case failed to report the presence of gallstones. Eleven patients had some form of colicky pain.

Nineteen patients had cholecystectomy with or without fistulectomy. Exploration of the common duct was performed in five of these cases. Only one death occurred in this group. Three of the remaining cases had incision and drainage of the fistula. Three cases had no surgery.

Combining the series of Henry and Orr with this review reveals that sixty-two cases have appeared in the medical literature this century. This confirms the conclusion of Henry and Orr that surgical treatment of cholecystitis has almost eliminated this complication. Furthermore, this complication can be found more often in underdeveloped countries where biliary tract surgery is not as available to the population.

Summary or Conclusion

Spontaneous external biliary fistula has been defined and classified. The pathological and physiological changes accompanying such a fistula were discussed. A survey of the medical literature from 1949 to 1968 is presented and an additional case reported. The rarity of this condition as a complication of biliary tract disease is attributed to the general acceptance of surgical treatment of cholelithiasis.

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Giant Appendicolith

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This patient's appendix was neither inflamed nor perforated but contained a very large appendicolith. This illustrates that this condition must be included in the differential diagnosis of calcification in the abdomen.

APPENDICOLITHS are a significant and not an infrequent finding in plain roentgenograms of the abdomen in that many subjects with this finding will eventually develop acute appendicitis.[1-7] However, it is not generally appreciated that these calculi may become huge even in the absence of symptoms, in which case this diagnosis may be difficult. This report describes a giant appendicolith in a patient, without symptoms related to the appendix, to illustrate this clinical situation.

Case Report

C. G. (U. Va. #44-34-21)—a 50 year old Negro male was brought to the emergency room on 4/28/69, because of a history of hysterical seizure. At that time, a roentgenogram of the lumbar spine was obtained since the patient had complained of pain in the back. This film showed calcific densities in the right side of the pelvis (Fig. 1). The largest of these measured 3.0 cm in diameter and was laminated. The patient gave a history of a single episode of pain in the right upper quadrant and in the lower quadrant approximately one week prior to admission. The pain was of a stabbing quality and without radiation. There was no history of jaundice, fever, or chills.



Fig. 1. Roentgenogram of the abdomen showing a large laminated calcific density and two smaller calcific densities in the right side of the pelvis.

An intravenous urogram was obtained, since the calculi were thought to be in a diverticulum of the urinary bladder. This examination showed that the calculi were outside the urinary tract (Fig. 2). Radiopaque calculi were also noted in the right upper quadrant and an oral cholecystogram showed these to lie in the gallbladder.

The patient was admitted on 5/27/69 for elective cholecystectomy, the indication being cholelithiasis and mild symptoms of

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cholecystitis. The calcific densities in the pelvis were found in the appendix and an appendectomy, in addition to a cholecystectomy, was performed. The specimen showed



Fig. 2. Intravenous urogram showing that the calcific densities are outside the urinary bladder.

the appendix to be 10 cms long and contained four calcified fecaliths, ranging from 1.0 to 3.0 cms in diameter. No other pathological changes were noted. It is interesting that the appendix was not acutely inflamed or perforated.

Discussion

In an excellent article by Felson and Bernhard,[2] the average diameters of appendicoliths in 60 collected cases were presented. These measured as follows:

less than 1.0 cm.	29 (41.4%)
1.0 cm to 2.0 cm	25 (35.7%)
more than 2.0 cm	16 (22.8%)

Of these, the largest calculus described was 2.5 cm and weighed 13.5 gms. In their article, they also note that there was perforation of the appendix in nearly 50% of the cases with appendicoliths. Brady and Carroll[6] state that 90% of the patients showing appendicoliths will eventually present with symptoms of acute appendicitis.

Other entities to be considered in the differential diagnosis of calcification in the right lower quadrant of the abdomen are:

1) Urinary calculi: Appendiceal calculi are frequently mistaken for urinary calculi. Absence of lamination favors a ureteral calculus and an intravenous urogram will confirm the location.
2) Biliary calculi: These are often identical in appearance to appendiceal calculi and can cause confusion, particularly if the gallbladder is low in position. Differentiation may require contrast examination of the gallbladder or colon.
3) Calculus in a Meckel's diverticulum: These are rare and differentiation from appendiceal calculus could be difficult, if the diverticulum presents in the right lower quadrant.
4) Calcified mesenteric lymph nodes, calcified appendicis epiploicae, phleboliths and others can usually be differentiated by their appearance and position.

Summary

A case of giant appendicolith is presented to emphasize the fact that such large appendicoliths may occur and should always be considered in the differential diagnosis of calcifications in the right lower quadrant of the abdomen regardless of their large size. The importance of such recognition increases when the patient presents with symptoms of acute appendicitis.

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(*Continued on page 571*)

A Century Later

A Case Report

A. JAY CHAPMAN, M.D.
Fort Worth, Texas

GENERAL PUBLIC, as well as medical, interest may be aroused when a body—long dead—is unearthed either by accident or by design. The problems of identification, time of death, and cause and manner of death all rear their ugly heads. Some or all of these queries may never be answered in some instances, while in others the answers desired may simply and easily be ascertained. Sometimes dead men do tell tales and this was true in the present case.

Case Report

In April 1970, during an excavating project in Henrico County, Virginia, a cast iron coffin was uncovered. It was constructed with top and bottom halves held together by bolts. The top at the head of the coffin had a glass "window" (fig. 1) covered by a piece of cast iron on the underside of



Fig. 1

which was etched the decedent's name (J. F. T———) followed by "5th La. Reg't—Killed 24th May 1862".

The coffin had taken on water and the body was, for the most part, a somewhat dreary mass of bones resting in a gray sludge (fig. 2). Although the thread which had held the garments together had decayed



Fig. 2

completely, the material was fairly intact. The body was wrapped in a blanket of U.S. army issue of the period and was dressed in a tunic shirt, "longjohns", trousers and socks and boots. A wooden spool which had apparently held thread for repair of his clothing, was in the shirt pocket.

The principal finding of interest to the pathologist was the head. He had long black hair. Dental cavities had been filled with gold fillings. In spite of complete decomposition of all the other tissues, a large portion of brain remained as adipocere. The fact that the adipocere derived from the brain was easily seen due to the absence of

a large part of the bony structures of the right half of the head (fig. 3). The "cratering" observed in the bony margins of the defect indicated that it was due to a gunshot wound directed from anterior to posterior.



Fig. 3

Comment

The case presented offers no problems in the realm of the usual medicolegal considerations. It is not unusual for Confederate remains to be accidentally unearthed in Virginia since apparently a large number of graves have become—or were always—unmarked. It *is* unusual, however, for the remains to be found in as intact condition as the present one and it is especially remarkable that adipocere derived from the brain still remained after approximately 108 years.

Adipocere is formed from the body lipids under appropriate conditions of temperature and moisture. It is a waxy, if somewhat "rancid", whitish soft material which may faithfully retain the major anatomic features of the original tissue. One is forced to assume that the local conditions about the head were correct for this change to occur and remain while elsewhere in the coffin putrefaction supervened.

Needless to say, the artifacts recovered from such burials are sought by museums, especially coffins. The cast iron coffin of the type found in this instance was common during the Civil War and for a few years thereafter, having sold for approximately $40 each. They are rare at the present. It is unusual, however, for the museums to obtain them, since in almost all cases Confederate remains are claimed by loyal members of the United Daughters of the Confederacy and are reinterred, whether or not the body is identified. Thus was the ending in this case with reburial in Hollywood Cemetery in Richmond.

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The Role of Third Parties

ROBERT C. DENZLER
Richmond, Virginia

I AM ESPECIALLY GRATEFUL to have this opportunity to speak to you at this particular time because there are a number of important things happening right now that concern all of us.

In my remarks here today, I will tell you that in many situations I believe you are seriously misunderstood and unappreciated. I'll tell you why I believe this is so; and I will propose that something be done about the situation.

Let's talk a little about the relationship between Blue Shield and the physicians. The title of my part of the program refers to the role of the third party—which Blue Shield really is, as the fiscal intermediary between you and your patients. It's a system that works well for all the parties—one that has been proven by over 30 years of experience.

In addition to the bill-paying role, Blue Shield now provides physicians with support against the ever increasing demands of his profession as well as providing a strong voice in situations and programs which directly affect their careers.

Quite properly, The Medical Society of Virginia has direct representation on the Blue Shield Board of Directors. The close relationship between The Medical Society and Blue Shield enables us to keep up to date on modern medical practice and current trends in health care. Because of our unique relationship with you, there is no question of Blue Shield directly or indirectly inhibiting the physicians' professional freedom and sense of responsibility. In fact, contrary to what we hear from some people who don't understand or appreciate the realities of active, day-to-day medical practice, Blue Shield provides a bulwark against any factor that threatens the free enterprise system and the doctor-patient relationship. I can't emphasize too much the importance of this fundamental concept that preserves the independent status of physicians—the concept that has built the finest system of medical care the world has ever known.

One of our most recent moves to further support this relationship is the Blue Shield Usual and Customary program, which enjoys the widespread support of both physicians and the people of Virginia.

Through the Usual and Customary program, participating doctors are paid their charges in full for medical service. An automatic escalation method is built into the Usual and Customary concept (and if the cost of living ever stops going up, we might even have a de-escalation system).

This method of payment reflects the physicians' charges to periodic reviews, eliminating the need for time-consuming negotiations. The program continually reflects doctors' charges and keeps pace with rising overhead costs. We believe that a firm, preset fee for payment does not reflect the total cost of every doctor for services rendered. This can be unfair reimbursement to physicians—something that we want to avoid.

Usual and Customary has not overlooked the variation of charges between the rural and urban areas of Virginia. The program is based on a range of fees that varies in different parts of the state.

Now I'd like to report on some really good news concerning the Usual and Customary procedure. As you know, questions by physicians or subscribers concerning the payment of the stated fee are first presented

ROBERT C. DENZLER, *Vice-President and General Manager of Blue Shield of Virginia and Blue Cross of Virginia.*

Presented as part of a Panel on Comprehensive Health Care at the Annual Meeting of The Medical Society of Virginia, Virginia Beach, October 18, 1969.

before the Board of Directors' Professional Medical Review Committee. Now here's the good news. Of some 200,000 individual cases submitted to Blue Shield over a two-year period, in only 29 cases were there requests for review and of the 29 not a single one—not one—required the review of a further appeal mechanism set up by The Medical Society of Virginia for this purpose. This is most impressive and should assure you, as it does me that the Usual and Customary concept goes a long way toward answering the continual dilemma that has long concerned the Medical Profession, the public, and Blue Shield of Virginia.

Now what about rising costs? I want to emphasize that Blue Shield of Virginia recognizes that rising medical costs do not reflect a self-initiated income boost for the physician, but simply reflect the overall increase of the cost of living of the doctor and his office operation.

Today, more than ever before, there is a vital need for a continuing educational program to interpret the facts about medical costs to the people of Virginia. It must be done together by the medical profession, Blue Shield and by the commercial insurance companies as well. If we don't tell the story clearly and accurately, someone will tell it wrong. You can be sure of this. You are executing your responsibility and role as physicians, but in many instances you are unjustly criticized and often unappreciated for the work you are doing. In the days ahead, it is most important that the public understand and support what you as individual physicians are doing and what your Society is doing and planning.

And so, I urge you at this time to undertake a comprehensive program to inform the public; a program of understanding . . . a program of facts . . . a program to gain the support and respect that the medical profession of Virginia deserves. The future quality of the medical care—and I emphasize the word quality—is so vital to Virginia that it seems to me that this information program merits top priority in your Society's program. You certainly have nothing to hide, and through a well planned, factual information program you have a great story to tell and much to gain.

The public, along with the federal health people, has to understand that physicians must receive compensation that is related to how much it costs to "bring home the bacon" today—not yesterday—but today. The public should also appreciate that the service and care being provided is far more sophisticated, far more effective than ever before.

You are paying more for the equipment used to serve your patient . . . you are paying more to occupy office space . . . you are paying more for maintenance of your office . . . you are paying more for daily office supplies . . . you are paying more to retain trained employees in today's competitive market. And this does not include the steadily rising cost of living which creeps up month by month affecting you personally, just as it does your patients.

The Department of Commerce reported to us just two weeks ago that the overall cost of living for the first six months of this year, compared with the first six months of 1968 increased by 5.1%. Physicians' charges have increased, too, but as a result of your own efforts to hold the line and through the built in features of Usual and Customary, the increase has been held to a minimum. In fact, during the first six months of this year, under Usual and Customary, physicians' charges went up only 2.2%—less than half the cost of living increase.

Wouldn't it be great if everyone in the health care field were as successful in holding the line on costs. I'm sure that Mr. Nixon's economic advisors would applaud you if they knew how well you are doing here in Virginia.

P.O. Box 656
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Clinicopathological Conference . . . .

Pharyngitis, Uremia and Hemoptysis in 17-Year-Old Boy

Edited by
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Protocol Prepared by
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Cinical History

A 17-year-old, white male sophomore high school student was admitted to the Medical College of Virginia Hospitals on 9/6/67 because of oliguria and hyperkalemia. He had been in good health until a week prior to admission, when he developed sore throat, fever, chills, malaise, myalgia, anorexia and a productive cough, for which he was seen by his family physician. A diagnosis of Streptococcal pharyngitis was made and he was started on oral penicillin but developed nausea and frequent vomiting and was unable to take the penicillin for the five days just prior to admission. With the onset of the nausea and vomiting, he noticed that his urine was turning color and there was a decrease in his urine output. He had passed almost no urine for three to four days prior to admission. His cough was at first productive of clear phlegm, but three days prior to admission he had had increasing amounts of blood-streaked sputum associated with shortness of breath and orthopnea but no paroxysmal nocturnal dyspnea or edema. Because of his increasing symptomatology, he was taken to a local hospital where he was found to have a "nodal rhythm" on electrocardiogram with tall peaked T waves. A serum potassium was found to be 7.7 mEq/1. He was then transferred here for further therapy.

Review of Systems: Negative.

Past Medical History: Non-contributory.

Family History: Maternal grandmother died at age 60 with high blood pressure, diabetes and heart disease. His maternal grandfather was living, but was said to have some kidney disease. The remainder of the family history was non-contributory.

Social History: Patient denied the use of ethanol or drugs. He smoked less than one pack of cigarettes a day. He denied any exposure to known toxic substances.

Physical Examination: BP 180/100, P 84, R 32, T 100.2°. Patient was a slightly obese, pallid, acutely ill, young white man who appeared to be in moderate respiratory distress and was slightly cyanotic but alert. Funduscopic examination was normal. The pharynx was injected but no exudates were seen. Neck veins were flat. There was no significant lymphadenopathy. Chest was symmetrical. Maximum cardiac impulse was within the midclavicular line. Sounds were clear. There was a systolic blowing murmur, heard best along the left sternal border, of Grade II/VI intensity. No pericardial friction rub was detected and no gallop rhythm was heard. Lungs revealed dullness to percussion in both bases posteriorly with decreased breath sounds over this area. Coarse rhonchi were present throughout all lung fields. Abdomen was normal except for slight right upper quadrant tenderness without rebound or spasm. Extremities revealed slight cyanosis but there was no edema or clubbing. Examination of the genitalia and rectum was unre-

markable. Neurologic examination was within normal limits except for diffuse weakness without tremor or lack of coordination. The reflexes were somewhat hypoactive generally.

Laboratory Data: Urine was unobtainable. Hemoglobin 14.4 gm%, hematocrit 40, white count 25,300/mm^3 with 85% neutrophils, 6% lymphocytes, 9% bands. Platelet count 342,000/mm^3. Reticulocyte count 0.6%. Prothrombin time concentration 24%. BUN 192 mg%. Creatinine 17.4 mg%; sodium 120 mEq/1, potassium 7.2 mEq/1, chlorides 79 mEq/1. Total protein 6.3 gm% with 2.4 gm% albumin. Calcium 7 mg%. Bilirubin 0.6 mg%, SGOT 156 RFU. A chest x-ray revealed consolidation of the entire right lung. KUB showed haziness of the abdominal tissues suspicious of diffuse edema.

An electrocardiogram revealed peaked T waves compatible with hyperkalemia.

Blood gas studies with patient on a Bird respirator was 40% oxygen by face mask revealed a pH of 7.39, PC_2 42, PO_2 33 and a bicarbonate of 25. The blood gases were repeated after the addition of 100% oxygen and showed a PO_2 of 43 and a PCO_2 of 50.

The patient had received three ampules of sodium bicarbonate prior to admission and two more ampules of sodium bicarbonate were given in the Emergency Room along with 20 ml calcium gluconate. He was started on sodium polystyrene sulfonate enemas. The following morning, a tracheostomy was performed and peritoneal dialysis initiated. A small amount of urine was obtained by catheterization which revealed a pH of 6. The urine was 3+ positive for protein and blood although sugar and ketones were negative. Microscopic examination of the urine sediment revealed red cells too numerous to count with only occasional white cells seen. Occasional pigmented casts were seen as well as a few crystals and occasional urate crystals.

Blood cultures obtained on admission grew only Staph. epidermidis. Throat cultures grew Pseudomonas and the urine revealed no growth.

Patient was started on treatment with hydrocortisone 280 mg q 8 h, and penicillin-G, 1 million units q 6 h IV, and peritoneal dialysis was continued. Two days after admission, his BUN had fallen to 122 mg%; serum sodium 152 mEq/1, potassium 5.6, chlorides 95 and CO_2 26. That same day, the patient developed chattering teeth and tonic and clonic movements of the left face and left arm which became generalized. The seizure was controlled by diphenylhydantoin and phenobarbitol.

On 9/10/67, patient began to show some diffuse abdominal tenderness, and Gram stain of the peritoneal fluid revealed Gram-negative cocci. Cultures of the peritoneal fluid grew Pseudomonas and another unidentified Gram-negative organism. Peritoneal dialysis was discontinued and the patient was started on colistimethate, 50 mg q 4 h, and a shunt was placed in the right arm for hemodialysis. Subsequent to this procedure, the patient became unresponsive and developed a bleeding diathesis.

His physical examination was unchanged except that the pupils were moderately dilated and unresponsive to light, with no corneal reflex obtainable. Hemoglobin was reported as 6.1 gm%, and white count 16,100/mm^3, with the differential being essentially unchanged. Platelet count was 295,00/mm^3. BUN 153 mg%, creatinine 11.5 mg%, serum sodium 144 mEq/1, potassium 5.1 mEq/1, chlorides 90 and CO_2 27 mEq/1. Total bilirubin 2.6 mg%, with a direct-reacting fraction of 1.5 mg%. He became hypotensive and had an episode of cardiac arrest from which he was successfully resuscitated, although he required isoproterenol to maintain his blood pressure. A lumbar puncture was performed which revealed an opening pressure of 440 mm of water. Fluid was xanthochromic and contained 14 white cells, with 16 neutrophils and 4 lymphocytes. There were 2,720 red cells; protein 560 mg%, sugar 119 mg%.

He remained completely unresponsive and passed several tarry stools. An electrocardiogram was flat and the patient expired at 6 p.m. on 9/13/67.

An autopsy was obtained.

Clinical Discussion

Dr. William Falls: I think we can say that this young man died because of a renal disease which was a reflection in some way of altered immunological responsiveness. Whether I can pin a specific name on this or not, I am not sure.

To review the case briefly, the patient was a 17-year-old white boy who, as far as we know, was in perfectly good health until about a week or so prior to admission. At that time, he developed what seemed to be an upper respiratory infection, initially manifested by sore throat, fever, chills, malaise, myalgia and anorexia. Immediately, knowing that he was later admitted to this hospital with severe oliguria and hyperkalemia, one thinks of the possibility that this was a Strep infection and that the patient developed a post-Streptococcal acute glomerulonephritis. I think this would be a perfectly reasonable assumption. However, the protocol that goes on to say that in association with this, the patient developed a productive cough. A productive cough is not ordinarily a part and parcel of post-Streptococcal glomerulonephritis. A cough might develop if the patient developed a Strep pneumonia or later on as he became congested when his kidneys failed. Apparently his family physician felt that he did have a Strep pharyngitis and treated him, I think quite appropriately, with penicillin. However, after a couple of days of penicillin, he was no longer able to tolerate the medication because of the development of nausea and vomiting. This introduces another potential cause of his renal disease, i.e., a hypersensitivity to pencillin.

The nausea and vomiting could be a reflection of the disease itself. He could have had a viral pharyngitis and then this could have been associated with a secondary gastroenteritis. But more likely, I think, inasmuch as this developed more-or-less in association with oliguria and presumably hematuria, the nausea and vomiting were probably a reflection of incipient or early uremia.

Then we are told that his productive cough which initially yielded clear phlegm began to become blood-streaked and was associated with the development of shortness of breath. These are not common early symptoms of post-Streptococcal glomerulonephritis, and I would like to ask at this time if anything else is known about the character of this sputum. If the sputum were purulent, one would think in terms of a bacterial pneumonia, whereas if the sputum truly contained primarily blood, we would immediately think of the possibility of Goodpasture's syndrome. I wonder if this evidence is available.

Dr. Moon: It says "the sputum is grossly bloody, but on gram stain, pneumococci were seen." There is no statement made of whether the phlegm was purulent.

Dr. Falls: Well, I will accept then the fact that the sputum was primarily bloody. The pneumococci are of interest because certainly glomerulonephritis has been seen in association with pneumococcal infections, but inasmuch as pneumococci are seen so freqeuntly in non-specific sputa, I will consider this to be a bloody sputum.

He was admitted to the hospital here, obviously uremic and hyperkalemic, with the electrocardiographic changes to fit this picture.

His family history is of interest inasmuch as his grandmother had diabetes. I think that we can exclude the possibility of diabetic renal disease because it is usually quite insidious in onset. His grandfather apparently also had kidney disease, and any time you see a family in which there is a recurrent kidney disease generation after generation, one must consider the possibility of a heredi-

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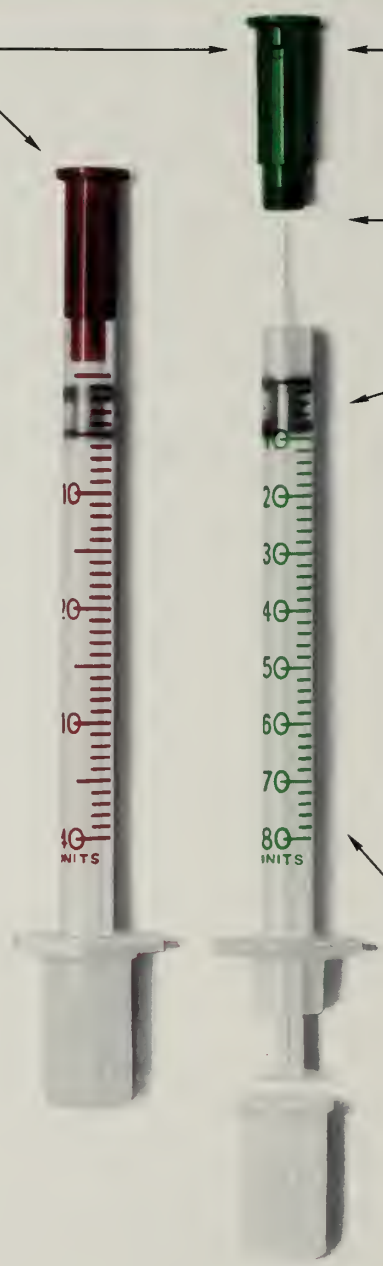
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Pri

tary type nephritis. The most common type, that described by Alport[1] with foam cells in the renal parenchyma, usually presents much earlier in life in males than would have been possible in this boy's grandfather. I think the very fact that this man lived to be a grandfather excludes this possibility. I think the social history is extremely important because I am going to accept the statement that the patient had no known exposure to toxic substances and exclude the possibility that he had acute tubular necrosis because of ingestion of some toxic substance.

The physical examination was interesting inasmuch as he appeared to be in more respiratory distress than one would expect with post-Streptococcal nephritis. It is of interest that there is a heart murmur. I am always leery of patients at CPC's who have heart murmurs, and the possibility of a subacute or acute bacterial endocarditis certainly must be considered. I wonder if this murmur had ever been noted before or if it changed at any time during his clinical course.

Dr. Moon: It was not noted to change during his hospitalization.

Dr. Falls: Well, presumably then, this was a relatively innocent murmur, perhaps a reflection of increased flow in a high output state in a congested patient. But I want to keep this in the back of our mind as a possibility.

The physical findings in the lungs were compatible with either fluid or congestion. The right upper quadrant tenderness suggested that the patient might have some enlargement of the liver secondary to congestion or perhaps from involvement by his disease. I think the neurologic manifestations were simply a reflection of hyperkalemia.

The laboratory data are also of interest. His hemoglobin is 14.4, and in the presence of a congested state, I think that this virtually excludes the possibility of chronic renal disease, since any patient who is this azotemic with chronic disease would be anemic. I do not think the white count and differential help much except that they certainly are compatible with some infectious process. The platelet count is of interest because it is perfectly normal and later on it falls slightly, but not to a very low level. The prothrombin time interests me because it is 24%. This is a somewhat peculiar finding in someone with glomerulonephritis, and it suggests either that the patient did indeed have some liver disease or perhaps, as we will see later, that coagulation factors were being consumed in some way. The BUN and creatinine are compatible with the uremic state and are proportional. I think the electrolyte findings simply reflect congestion.

The chest x-ray was interpreted as revealing consolidation of the entire right lung. I would like to have the radiologist give us his opinion.

Dr. James Glenn: The patient had five different portable chest films between September 6 and September 12 and out of those, this is the best remaining film. It reveals the tracheostomy tube and bilateral alveolar infiltrates in each lung, apparently involving all lobes. The heart is probably within the upper limits of normal size and not definitely enlarged radiographically. The bilateral alveolar infiltrates are somewhat concentrated around the hilar regions, suggesting pulmonary edema, which can happen even with normal heart size and such things as fluid overload. Another possibility that is raised by the fact that the heart does not appear to be grossly enlarged is pneumonia and a third is intra-alveolar hemorrhage, both of which may have the same appearance as pulmonary edema. Certainly uremic pneumonitis would have to be considered in this patient, and can have the same appearance.

The only abdominal film we have was taken on the day of admission. There is a large amount of gas in the large and small intestines, but there is no distention of the

bowel. The liver is not grossly enlarged; the lower edge is seen here. The right kidney outline cannot be visualized. There is faint visualization of what appears to be the contour of the left kidney (a portion of it at least), and it does not appear to be a shrunken kidney such as you would expect if this were a chronic end-stage kidney.

Dr. Falls: Thank you very much.

I think the films help us inasmuch as the relatively normal size of the kidney certainly supports the contention that this may be an acute renal disease, and the fact that there is diffuse pulmonary infiltrate certainly takes our thinking away from a typical lobar pneumonia.

The next set of laboratory data with which we are presented are the arterial pH and blood gas studies. They are of extreme interest. The pH is essentially normal, and I think this is probably a reflection of the treatment with alkali that he received shortly after admission, and possibly also secondary to his vomiting. The PO_2 is extremely low (33), and this indicates that his cyanosis was not secondary to peripheral stasis but had a central origin—either an alveolar-capillary block or else a right-to-left shunt. Then we notice that he was given 100% oxygen and his PO_2 increased only to 43. This is very suggestive to me of a right-to-left shunt which could be caused, I suppose, by continued perfusion of pulmonary tissue that is not being aerated, but certainly could be also explained by a shunt through an interatrial septal defect with reversal of blood flow. This set of findings concerns me a little bit because it makes me wonder about the possibility of a bacterial endocarditis superimposed upon a septal defect. Granted, this is very rare.

The urine was described as revealing many red cells and some pigmented casts. No red cell casts are described, but I wonder if these "pigmented casts" might possibly have been degenerating red cell casts. The presence of 3+ albumin and a large number of red cells points us towards a glomerular disease rather than an acute infectious process. The fact that his urine cultures later were negative supports this contention.

At this point in time, I think that there are certain diagnostic possibilities that present themselves. I think pre-renal factors have been excluded by the clinical course and by his general state of hydration. Post-renal factors, namely obstructive uropathy, have not been entirely excluded, but the fact that a catheter was later passed into his bladder without obstruction and the absence of a history of stones or sickle cell disease make this very unlikely.

I have put on a slide my diagnostic considerations at this point. I think one consideration is the possibility that this man had an immunologic complex disease with precipitation of soluble antigen-antibody complexes along the basement membrane. This may be seen in acute glomerulonephritis of the post-Streptococcal type. It may be seen in lupus nephritis, and lupus is something that we cannot exclude in this patient, although the absence of arthritis and the acuteness of his illness makes it a bit less likely. Glomerulonephritis secondary to subacute bacterial endocarditis, I think, must remain as a consideration. Henoch-Schonlein purpura is characteristically seen in children and is a fairly discrete syndrome characterized by purpura, gastrointestinal bleeding and renal disease. The patient later did have GI bleeding, but to my knowledge did not have purpura, and I will exclude this diagnosis.

Next we should consider those renal diseases which pathologically seem to be related to the generalized Schwartzman reaction seen in animals; these people have precipitation of hyaline-fibrin thrombi in the renal glomeruli and in larger renal vessels, even to the point of producing a cortical necrosis of the kidney. This is seen in the hemolytic-uremic syndrome, which has been described in children following an acute viral infection and associated with massive hemolysis

and development of renal failure. However, some patients in adolescence and early adulthood have been described with a similar syndrome, which seems to shade into that of thrombotic thrombocytopenic purpura, a disease of older individuals with somewhat similar pathology, in which the neurologic manifestations — seizures — may be quite prominent. Also in this group is the acute renal insufficiency that may be associated with Gram-negative sepsis. I think that later on this patient may well have had Gram-negative sepsis, but at this point we cannot make that diagnosis.

Goodpasture's syndrome has already been alluded to. This is a disorder which is seen most frequently in young males, and is characterized by the development of hemoptysis, severe anemia, and renal disease, usually in that order. In the review that Dr. Doolan and his associates presented in the American Journal of Medicine some years ago,[2] anemia was seen almost uniformly at the time the patient was first admitted. This patient did not have anemia when we first saw him, although he later did become anemic, and this concerns me somewhat in making a diagnosis of Goodpasture's syndrome. But inasmuch as this disease seems to be secondary to an immunologic process in which antibodies are developed against the basement membranes of both lung and kidney, I believe that it is possible that the disease might be quite fulminant and attack both organs practically simultaneously and in the same degree. Therefore, the fact that he later develops anemia, I think, is compatible with Goodpasture's.

Then we must consider the types of glomerulonephritis which immunologically seems to be of uncertain type. In polyarteritis nodosa (and in this group I would consider hypersensitivity angiitis secondary to drugs as well) the pathologic finding that we would expect to see is a true vasculitis. We cannot exclude this but I think that it is less likely than Goodpasture's.

Subacute glomerulonephritis is a rapidly progressive renal disease which is characterized pathologically by the development of marked crescents. This is a rapidly progressive process, and very recently evidence has accumulated to suggest that antibasement membrane antibodies similar to those seen in Goodpasture's syndrome may also produce this disease.

So at this point in time, it is my feeling that the patient probably had Goodpasture's syndrome, although I cannot be sure that he does not have subacute bacterial endocarditis with secondary glomerulonephritis and I cannot really rule out a polyarteritis-like picture.

At this point, it seems to me that the patient's disease changed or perhaps a second disease was superimposed on it. He underwent peritoneal dialysis and apparently developed peritonitis secondary to this. Now the peritoneal fluid revealed Gram-negative cocci, and this is really uninterpretable to me. The Gram-negative coccus that I am most familiar with is the gonococcus, and I don't really see how that could be in here. So I will just ignore that and assume that his peritonitis was probably secondary to a Gram-negative rod, which is undoubtedly the most common complication of peritoneal dialysis. Thereafter, his course deteriorated and the statement is made that he developed a bleeding diathesis. I think that from the protocol we can assume that he indeed had a cerebral hemorrhage or subarachnoid hemorrhage, probably the immediate cause of his demise. Additionally, he terminally passed several tarry stools, and at this point his hemoglobin was noted to be 6 gm. So somewhere between his admission and his demise about five days later, there has been a great change in his blood status. The fallen hemoglobin suggests either that he had bled internally or else that he has hemolyzed, and I am certain that both of these may not have occurred. His bilirubin rose and we have no other evidence of changes in liver function. Antigen-antibody

reactions have been described as precipitating this so-called generalized Schwartzman reaction or a generalized intravascular coagulation syndrome. This may be associated with severe hemolytic anemia which is characterized on the peripheral smear by the development of very bizarre red cells—helmet forms and other types of bizarre findings. I would like to know at this point if a peripheral smear was done and if it showed bizarre findings. Also, I would like to know if other coagulation factors were assayed at the time the patient developed his so-called bleeding diathesis.

Dr. Moon: A peripheral smear is not recorded on the laboratory sheet and there is no coagulation record on the chart.

Dr. Falls: Well, I would be much happier if the platelet count had fallen to about 50,000 because this would be compatible with the development of intravascular coagulation. I tend to believe that that indeed is what happened although I just don't have the evidence to support it, and I suspect that this caused his demise.

My final diagnosis, then, would be Goodpasture's syndrome with a superimposed state of intravascular coagulation, either secondary to the Goodpasture's syndrome or to Gram-negative sepsis. I am still concerned about the possibility of a subacute or acute bacterial endocarditis possibly caused by a Staphylococcus.

Dr. Moon: There were a great many people who saw this patient in the hospital —the renal team in particular, Drs. Randall, Setter and Bracken. Are any of them here and would any of them care to make any comments? Dr. Randall?

Dr. Russell E. Randall, Jr.: Our working diagnosis was the same. The picture was that of an acute Goodpasture's in that the hemorrhage was quite profuse. We thought at the end that he had probably bled into his brain with the increased pressure, etc.

We did attempt to grow viruses from every possible place (including post-mortem aspiration of his kidney) in an attempt to identify a viral cause for whatever this disease was, but these were all negative.

We did not have some other information which I can probably present later when we see the autopsy, but we had no other bright thoughts than what you covered.

Dr. Moon: Thank you, Dr. Randall. Dr. Doolan, any comments?

Dr. Paul D. Doolan: In terms of the clinical picture, I think I have seen about a dozen of these cases now. I don't know of any other renal disease right off-hand that kills people as rapidly as Goodpasture's. I know of two or three patients who have died within three weeks of diagnosis. The ones who have died acutely have expired with the most terrifying type of pulmonary hemorrhage, not due to their renal disease. In this case, the mode of exitus, the chest x-rays and the lack of anemia are all atypical for Goodpasture's syndrome.

Dr. Moon: The pathology for today is being presented by Dr. Silverberg.

Pathological Discussion

Dr. Steven G. Silverberg: I would like to start by thanking Dr. Falls for what I thought was an excellent discussion of all the variables in this rather complicated case, which I think may still be rather complicated even after we present the autopsy findings.

When I was asked to serve as consultant on this case, I was told that this was a rather typical case of Goodpasture's syndrome, which is the diagnosis that had pretty universally been made. What I am going to attempt to do now is basically show why I think it is not.

The immediate cause of death was a massive, intracerebral hemorrhage which had actually perforated, so that there was also subarachnoid and even subdural bleeding. Microscopic sections and intensive gross ex-

amination of the brain failed to disclose the cause of this hemorrhage, in that there was no aneurysm, no abnormal vessels, no tumor and no evidence of vasculitis.

This was the gross appearance of the lungs at autopsy. They were quite heavy, weighing a total of 1000 gm and showing this rather mottled appearance indicative of regions of congestion, some of hemorrhage and even some of pneumonia. The next slide shows that terminally there was quite a bit of blood in the tracheobronchial tree as well as in the pulmonary parenchyma.

This is a gross photograph of the kidney to demonstrate that there was also hemorrhage in the renal pelves. The next slide shows the capsular surfaces of the kidneys. The kidneys were swollen, weighing 200 gm each, and their capsular surfaces did show petechiae, which are usually indicative of a primary glomerular disease. There were also some foci of hemorrhage in the intestine.

This is a photomicrograph of one of the kidneys. Virtually every glomerulus in both kidneys was involved by a change that I think is quite apparent here. There is swelling of these glomeruli with a great deal of hypercellularity, so that this is what we would call an acute, diffuse and generalized, proliferative glomerulonephritis (Fig. 1). The next slide shows a higher power view of one of these glomeruli to demonstrate the great hypercellularity. Notice that there are very few, if any, inflammatory cells in this glomerulus, nor any membrane thickening, exudative changes or necroses. This is purely a cellular proliferative type of reaction, and most of these cells are endothelial and mesangial rather than epithelial cells.

This next slide is stained to demonstrate the basement membrane, and I think the most important thing to notice here is that peripherally where we can see the membranes, there is no thickening. All of the thickening that we do see is axial and probably largely mesangial in distribution.

The next slide indicates that many of the tubules contained fibrinous material, exudates which presumably originated from necrosis of cells both in the glomeruli and (as we can see in the next slide) within the tubules themselves. Associated with the glomerulonephritis, there was quite a bit of actual necrosis of tubular epithelial cells.

This is a photomicrograph of a lung—one of the areas in which we were able to demonstrate hemorrhage. Most of the slides taken from these lungs did not show hemorrhage and I think you can note at this power

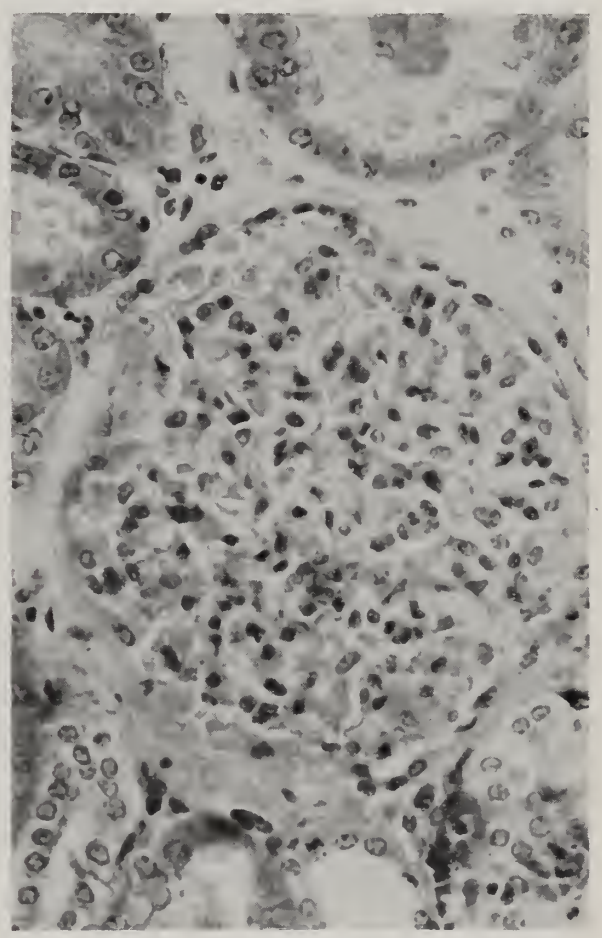


Fig. 1. Glomerulus showing marked proliferative glomerulonephritis (all glomeruli showed a similar picture). (H & E x 350)

that this hemorrhage really is acute. There was no evidence of chronic hemorrhage, i.e., there was no pulmonary hemosiderosis, or engorgement of histiocytes in the alveoli with iron pigment secondary to broken-down blood, as would be seen if this process had been going on for some time. The hemorrhage that was present was predominantly

associated with foci of pneumonia, so that this was more a hemorrhagic pneumonia than a pure intra-alveolar hemorrhage such as we would expect to see with Goodpasture's syndrome.

However, the most prominent finding in multiple sections of the lungs were areas in which the interalveolar septa can be seen to be swollen, thickened, hypercellular and to some extent fibrotic, and in which these large globular masses of fibrinous exudate and cellular material are seen within the alveoli. This is a higher power view showing this fibrinous material surrounded by these large cells which are typical alveolar pneumocytes, and showing considerable cellular infiltrate and thickening of the interalveolar septa (Fig. 2). There is very little evidence of hemorrhage in these areas.

This is another slide indicating alveolar septal edema, some fibrosis and a great deal of increased cellularity and inflammatory infiltrate, predominantly chronic in nature, mononuclear rather than polymorphonuclear leukocytes.

This PAS stain brings out the fibrin nature of these plugs within the alveoli, and also shows that these cells that are present in the alveoli are the same cells as these rather hyperplastic alveolar lining cells or alveolar pneumocytes that we can see so well here. The next slide shows the presence in many alveoli of typical hyaline membranes lining the alveolar septa. In the examination of all these lung slides, there was no evidence of any iron.

This was my final pathologic diagnosis on this case. I thought that this was an acute proliferative, probably post-Streptococcal type of glomerulonephritis, as manifested clinically by uremia and by hypertension. The interstitial pneumonitis which was the predominent process in the lungs is interpreted as uremic pneumonitis. Intracerebral, intraventricular, subarachnoid and subdural hemorrhages were secondary to the hypertension. Foci of acute bronchopneumonia, largely hemorrhagic, of both upper lobes were prominent, with blood in the tracheobronchial tree and bilateral serous pleural effusions. There were three very small superficial acute gastric ulcers which were probably secondary to the cerebral hemorrhage, and these resulted in 250 ml of coffee-ground material in the stomach.

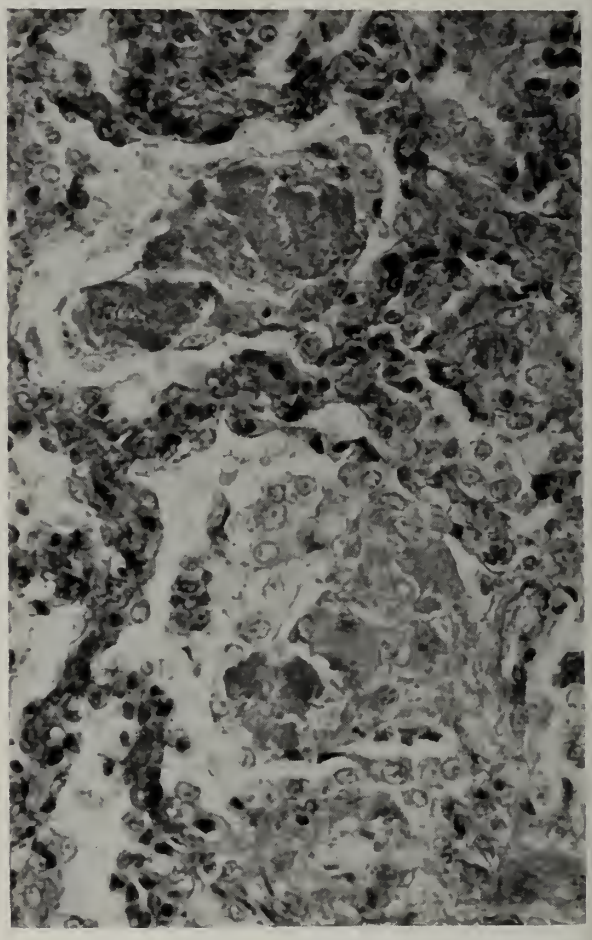


Fig. 2. Photomicrograph of lung, showing alveolar septal thickening and mononuclear cell infiltrate, and intra-alveolar pneumocytes and fibrinous exudate. (H & E x 350)

There was a non-hemorrhagic ascites—postmortem cultures of which (and I think antemortem as well) were positive for Klebsiella species. Bilateral renal pelvic hemorrhage, in addition to all the other hemorrhages, certainly suggested that this patient had some sort of bleeding diathesis. A recent tracheostomy and acute passive congestion of the abdominal viscera were also noted.

Since this was pretty generally considered to be a case of Goodpasture's syndrome, I

thought I might summarize some of the reasons why I felt that it was not. Many of the atypical clinical features were already alluded to by Dr. Falls. The fact that the manifestations of the renal disease (dark urine and oliguria) were noted before the hemoptysis is a very unusual finding in Goodpasture's syndrome, if it ever really occurs. The evidence of renal failure and uremia at the time of admission is also unusual. The chest x-ray was atypical for Goodpasture's syndrome, in that the x-rays in these cases have usually been reported as showing densities beginning at the hilar regions but extending predominantly into the bases of both lungs, whereas the x-ray in uremic pneumonitis is much as we saw here—hilar densities extending out laterally in the typical butterfly distribution, but not particularly extending towards the bases. The presence of what I assume to have been red cell casts in the urine is also very unusual in Goodpasture's syndrome and certainly not at all unusual in acute glomerulonephritis. Also atypical were the normal hemoglobin at the time of admission (which Dr. Falls already alluded to) and the extremely short course—most of the patients reported in the literature have survived a minimum of a few months, although they rarely survive much over a year. Certainly there are some that do have a very short course, but as Dr. Doolan has emphasized, these usually die a pulmonary death and in these patients almost uniformly, the kidneys show a lesion consisting of a focal glomerulonephritis rather than a diffuse, generalized glomerulonephritis such as we saw in this case. Also the presence of a bleeding diathesis, as far as I know, has not been reported in association with Goodpasture's syndrome.

As for atypical pathologic features, as I have already said, the presence of a diffuse and generalized proliferative glomerulonephritis is unusual so early in the course of the disease, although virtually any type of glomerular lesion may be seen after several months. The lack of evidence of prolonged pulmonary hemorrhage unassociated with pneumonia (in other words, the lack of iron pigment and hemosiderosis in the lungs) is also against the diagnosis. Finally, the presence of interstitial pneumonitis with hyaline membranes and interalveolar globules of fibrin and pneumocytes is unreported in Goodpasture's syndrome but quite typical for a uremic pneumonitis.

In summary, I feel that an entity such as Goodpasture's syndrome—if it is indeed an entity—is best defined by a constellation of clinical and pathologic findings, and when so many are absent the diagnosis is no longer tenable.

Dr. Moon: I am sure there are some comments!

Dr. Randall: I do not believe that you can tell from what we saw in the kidneys that this was not so-called "Goodpasture's" —i.e., antibasement membrane disease—because this picture of a diffuse proliferative glomerulonephritis has been seen in Goodpasture's. By light microscopy, I could not tell the two apart.

The way you tell, of course, is by electron microscopy or by immunofluorescent techniques. The electron microscopy on this patient is on my desk in blocks and, of course, we will get this done. This man's tissue was sent to Dr. Dixon's Laboratory (LaJolla, California), and actually Dr. Richard Lerner* (who was here yesterday) did the immunofluorescence for us and he did not see diffuse linear antibasement membrane deposition, so this is quite unlikely to be a rapidly progressive nephritis or Goodpasture's. He did see gamma globulin along some basement membranes, mainly in the mesangial areas, consistent with so-called acute complex disease. He took the man's serum and put it into either a monkey or a sheep and did not produce the Goodpasture's picture, so it looks like it was not

*Dr. Lerner is now with Wistar Institute, Philadelphia, Pennsylvania.

circulating antibasement membrane disease in this patient.

Dr. Moon: I guess that up-to-date information corroborates Dr. Silverberg's impression. Dr. Falls, would you care to close?

Dr. Falls: I would like to ask just a couple of questions. First, was an ASO titer ever done? Do we know if there was really evidence of a Streptococcal infection?

Voice from Audience: An ASO titer was done, but was not elevated.

Dr. Falls: He received fairly large amounts of penicillin from his local physician and I believe also after he got here. So I wonder if there is not more to this—if this is not really some sort of an immunologic reaction in the lungs that we do not really understand.

Secondly, I would like to ask if there was evidence anywhere in the brain, liver, anywhere else of intravascular coagulation. And I would like to ask what the liver showed.

Dr. Silverberg: We saw no intravascular coagulation, and the liver showed only acute passive congestion.

Dr. Randall: If that ASO titer was drawn on admission, wouldn't that be a little early for the rise in the ASO titer?

Dr. Falls: Well, that certainly could well be. I do not mean to imply that because the ASO titer was not elevated, he could not have had a Streptococcal infection. I am just questioning whether or not we understand entirely what did happen to this man.

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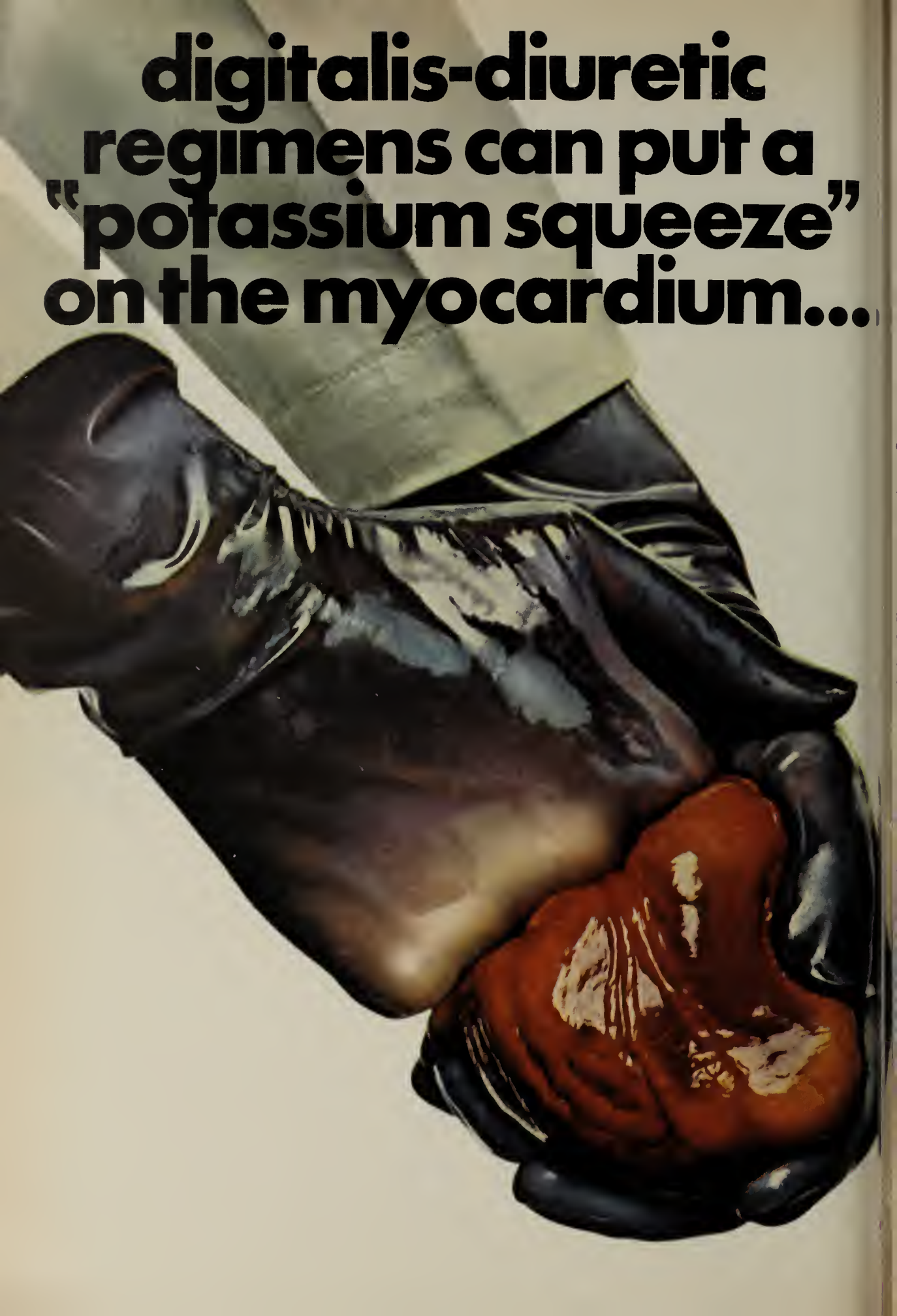
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For edema, oscites or effusions in adults initial daily dosage is 100 mg. in divided doses. Continue medication for at least five days to determine diuretic response; add a thiazide or organic mercurial if adequate diuretic response has not occurred. Aldactone dosage should not be changed when other therapy is added. A daily dosage of Aldactone considerably greater than 75 mg. may be given if necessary.

A glucocorticoid, such as 15 to 20 mg. of prednisone daily, may be desirable for patients with extremely resistant edema which does not respond adequately to Aldactone and a conventional diuretic. Observe the usual precautions applicable to glucocorticoid therapy; supplemental potassium will usually be necessary. Such patients frequently have an associated hyponatremia—restriction of fluid intake to 1 liter per day or administration of mannitol or urea may be necessary (these measures are contraindicated in patients with uremia or severely impaired renal function). Mannitol is contraindicated in patients with congestive heart failure, and urea is contraindicated with a history or signs of hepatic coma unless the patient is receiving antibiotics orally to "sterilize" the gastrointestinal tract.

Glucocorticoids should probably be given first to patients with nephrosis since Aldactone, although useful for diuresis, will not directly affect the basic pathologic process.

For children the daily dosage should provide 1.5 mg. of Aldactone per pound of body weight.

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Mental Health . . . .

DOUGLAS F. POWERS, M.D.

Some Psychological Urgencies and Emergencies of Childhood

When one thinks of psychological urgencies and emergencies during childhood, the list is quite extensive. The causation may be multiple and the problem of clearly dissecting cause and effect relationship is indeed a complicated one. There are so many factors that enter into any one situation: The constitutional makeup of the child and his particular style of reacting to both inner and outer stimuli; the previous experiences of the child; the life style, attitudes and patterns of reaction of the parents; the cultural factors which vary in different communities and regions.

So, we are often dealing with many variables which are frequently non-specific; and children's reactions vary widely.

In fact, when it comes to a clear-cut classification of children's psychological problems in general, we are left wanting. Many attempts have been made by psychiatrists and others to elaborate a system of classification of children's emotional disorders, but no really all encompassing, tight system has evolved. There are many overlaps and shades of grey existing among the categories of classification. This is discouraging when we would like to be more specific, and it makes effective communication somewhat difficult.

Perhaps we should not be too discouraged by this inability to classify and refine, which apparently is a universal quality of mankind in his "need to know". We should not be discouraged because infancy and childhood are the most plastic periods in human development, the time when personality is being formed and character developed. This state of nascence in childhood is the raw material from which we develop our later form and function. Perhaps the frustrating search for specificity as to cause and effect when we consider psychological problems of this age is but a reflection of the great potential of the unformed material with which we work.

What we do know about psychological problems of this age comes largely from casual observation and from retrospective studies which often leave something to be desired in scientific method. At the same time more work than ever is being done in terms of anterospective and predictability studies of young children and their behavior; and from this kind of work we no doubt will learn much in years ahead.

Anyone, a parent, a physician who observes children closely and over a period of time, nevertheless comes to certain open-ended impressions and conclusions about psychological matters in childhood which will aid, enhance or hinder the child's development; and it is from this point of view that we shall discuss briefly some of the important occurrences in the lives of children.

There are certain basic fears common to all children once they are old enough to comprehend at all. They fear *loss of love* from the persons most important to them, they fear *abandonment*, and they fear *physical harm*. As some of the examples of psychological urgencies of childhood are discussed these basic themes will recur.

Also, it is well to keep in mind, when thinking about psychological emergencies, the ego mechanisms of defense which the personality uses to protect itself in times of stress. These defense mechanisms are necessary and used to an extent by everyone every day. But in exaggerated form they are the clues that the stress has piled up. A partial list would include denial, regression, sublimation, projection, substitution, displace-

ment, reaction formation, identification with the aggressor.

When a Child Is Ill

When a child is ill for a period of time a great many shifts and changes occur in both parents and child which need to be watched closely. Some children will react by becoming excessively passive and leaning and accepting fully the anxious care of parents. Such a reaction can be prolonged much past the expected period of convalescence, with the child remaining in a more or less regressed state to the future detriment of his own ego functioning. Certainly most parents are motivated by genuine love in their concern for an ill child, but even those parents may need to be reminded that the child has improved and that it would be much healthier for all concerned if he were expected, or allowed, to do more things for himself.

On the other hand some children have strong defenses against being passive and leaning on others; and even in the face of an illness requiring extensive nursing care they cannot accept it. They are the children who show unusual stubbornness, obstinacy and recalcitrant behavior which may interfere with their recovery.

We can all recall the rheumatic fever patient who tried to become an invalid; some of them succeeded and never made an emotional recovery. There was also the rheumatic fever patient who could not tolerate inactivity and rest and who tore around at dragster speed at any suggestion of becoming more passive and less independent.

The fears and anxieties surrounding a child's being hospitalized are many and experienced by both parents and child. We have dealt with these much more effectively in recent years by taking time for more detailed explanation of what will happen, arranging a pre-visit to the hospital, allowing parents to be with the child before surgery and soon after recovery, and frequent visits while in the hospital. All of these maneuvers have helped to lessen a child's separation anxiety, his fears of abandonment and his fears of physical harm.

Yet, we continually see children in great states of anxiety and agitation about their illnesses and operations. Why shouldn't they have such feelings? As adults we have the same ones, and we are in better position to accept realities than children. They haven't lived as long, don't have the past experiences to measure the present by, and hence are more prone to frightening fantasies than adults.

A boy of twelve years recently had an inguinal hernia repair in a local hospital. The surgery was uneventful, but the boy became quite anxious, restless, and somewhat disorganized in his thinking. One might have guessed that a boy just entering into puberty would have been concerned about his approaching manhood, but it was necessary for the house officer to sit with the boy, talk with him about many things and listen carefully to what the boy was saying, before it was obvious that the boy had the fantasy that something had been done during surgery that would alter the eventual functioning of his genitalia. His fantasy was that he had been castrated.

Perhaps more helpful preparation could have been done prior to the surgery; who is to say. But in any event one needs to be alert to this kind of possibility. Some brief immunizing discussion with the child ahead of time is often preventive of such anxiety reactions which can become chronic if not relieved. It is not sufficient for the doctor to explain simply what will happen. The second step is to listen to the child's questions and try to help him clarify matters. This is his method of pre-mastering his anxiety. We see such attempts in younger children when they play doctor or nurse both before and after a hospital or surgical experience.

Children and Death

Children, and adults, are frightened of the idea of dying; and with the threat of

some serious illness their private world may be completely occupied with such thoughts. It is most comforting if with considerable conviction, we can reassure them that they will be all right.

But for the child with a probable fatal illness the emotional climate surrounding his care is altered. The adults around him, parents and professionals alike, are affected by this. We are anxious, even angry inside that such has to be the fate for this person we love and for whom we have many affectionate feelings. But care must go on and we often have to deal with our own feelings by suppression, repression and denial, and avoidance.

The child senses this, and what life there is for him becomes extremely difficult. Those who care for children with leukemia often say that a particular child is greatly relieved when someone, in a sense, "gives him permission" to talk about these dreadful feelings that have been locked in his private world. Numerous persons have made the observation that the child senses the gravity of the situation from the adults around but will not express his thoughts openly and directly and will wait for the adults to show a readiness to anticipate and a willingness to deal with these serious concerns. After such opportunities these children frequently become more relaxed, less withdrawn, less obstinate, more cooperative in allowing procedures, taking medications, and happier in general.

A good example of this came to our attention a few years ago. The patient was an attractive twelve year old girl, who was anything but attractive when one thought of her day-to-day care. She was all over the unit, interfering with nursing procedures with other patients, was quarrelsome and argumentative, frequently whining and crying, often uncooperative in her own procedures, and a general nuisance, moving willy-nilly about the unit and hospital.

Briefly, she had rejected two kidney transplants, and at the time had done quite well for nearly a year with one of her father's kidneys. Soon after this third transplant her father had left the family and his whereabouts were uncertain. There were other children in the family and the mother was having no easy time. To make matters more difficult the child had developed a severe hearing loss during her prolonged illness, and it was hard to converse with her unless one took plenty of time.

The consultation requested assistance in "managing her", and it was needed! The child, given the opportunity, was eager to talk about her illness and her life situation. She was afraid she would die, but had never talked about it. Any time she had a strange bodily sensation—a chilly feeling, unsteadiness, an ache or pain, she would become panic stricken and have to return to the hospital. To her this meant that something dreadful was happening inside, that she might be going into a coma, that her body was rejecting the latest kidney. She could not understand why her father had abandoned the family. Was it because of her? Didn't he love her? Yet, he had given her a kidney. "Why does he not like me?" These and many other emotionally-laden questions were constantly in this child's mind.

At the time that we first knew this girl the emotional climate on the unit where she had spent so much time, and received so much treatment, and to which she had to return periodically, deserves some comment. Patients received much attention and excellent care by a highly specialized and capable staff. Yet, one of the things that was noted on first visiting the unit was the rather cheerful atmosphere and a pervading attitude of almost gaiety. This was the unit where crisis was the order of the day and where the balance of life for many patients tottered precariously from week to week. The thought was expressed that perhaps staff, in order to live and work with its own anxieties, had to adopt such attitudes for its own emotional economy. But along with this protective surface attitude was always

the threat of death and dying, suffering and pain. The little girl, during her series of interviews, talked about this and said, "I think everybody is real worried and afraid, and I am too; but nobody will talk with me about these things."

She was much relieved to be able to express her concerns, worries, fears and became a considerably happier girl under her difficult circumstances. These talks enabled her to ruminate less and be less preoccupied with these morbid thoughts and to use her energy more productively. She got along better in school, was able to apply herself to the tasks at hand, and gain satisfaction in her own ego growth. This is not to say that she had no more worries; she obviously had many, but it was a definite turning point in her internal life and her disruptive behavior when she was able to face more realistically a very difficult situation.

Parental Illness

The prolonged illness of a parent may test the emotional strength of a child and the reactions to such an illness can be adverse. Often children will be quietly curious about an illness and confused on hearing a diagnosis, but will be reluctant to seek out more detailed information until someone provides an opportunity for him to do so. In prolonged illness the security of the child may be threatened by loss of economic support from parent's inability to work; but in addition, and just as important, may be the loss of emotional support and nurture which the ill parent is unable to provide. Then, too, one sees from time to time a child who is very closely identified with the parent who is ill, and who develops various complaints of a psychosomatic nature. It is not unusual in a family where a chronically ill grandmother lives who is the matriarch of the family to see a child identify with her and develop a variety of complaints.

Occasionally there is the rather tragic situation in which a parent may be extremely ill and a child may develop a lot of guilt about the illness, feeling that he had something to do with it, and suffer interminably in silence.

Paul's father underwent major brain surgery and had many months of terminal illness during which time he was kept at home. Paul's mother did the best she could under very adverse circumstances, but she seemed unaware of the suffering that Paul was experiencing. Absolute quiet had to be maintained in the house as the father was extremely irritable and suffered great pain. Paul was an active seven year old, and his mother continually spoke harshly to him, whipped him and ejected him from the house whenever he made any noise and told him that he was making his father worse. Day after day of this resulted in Paul's feeling more and more guilty, with his staying out of the house most of the time. He scurried around the neighborhood from one place to the other in a state of driven activity. Neighbors at first felt sympathy for him but soon were unable to tolerate his excessive dependency search, and he was both subtly and openly rejected. Beneath this state of excitability was real depression in a young boy. The result was a nearly successful attempt at suicide with resulting anoxia and brain damage.

Death is a difficult concept for children and those who have studied children's reactions to it are of the opinion that it is somewhere along toward ten or twelve years of age before a child gradually takes in the concept that death is something which happens to everybody eventually. The quite young child may view death as reversible and think that someone "has gone away," and will return. This idea is often reinforced when parents and neighbors simply speak of someone who has died as having "gone to sleep", "gone on a trip", "gone away for a visit" or "gone to heaven". At least well-intentioned parents and friends never tell a child that someone has "gone to hell"; or at least it has not been reported! The child of five or six may have the con-

cept that death is something which happens to other things and other people but never to himself.

So, one can anticipate many reactions depending on the age of the child, circumstances under which the loss of a parent occurred and the child's earlier experiences. One not uncommon reaction around the age of four, five and six is for a child to feel a great amount of guilt when a parent of the same sex dies. These are the years when children are struggling with their identity formation and where they may feel an intense rivalry with the parent of the same sex for the affection of the other parent. A little boy may be very angry with his father and may "wish he would go away". One can think of many situations in which a parent has gone away on a business trip and an accident or sudden illness occurs which results in the loss of life. The child then, who is not far removed from the magical omnipotence of the "wish being the same as the deed", which is common to young children, may feel totally responsible for something that he had no part in. Considerable help may be required for the child to understand that *anger does not kill* and *that the wish is not the same as the deed.*

When the loss of a parent does occur in these earlier years it makes for a trying situation for all concerned. The economy of the household may be devastated. Also, the remaining parent in his or her own grief and loneliness, may unconsciously seek gratification of affection to a pathological degree from the child. It does seem to be more difficult psychologically for the young child with the loss of the parent of the same sex. For one thing they are without a suitable model with whom to identify and some very intense and often unhealthy relationships may develop between child and remaining parent. The little girl cannot be the "woman of the house", and the little boy cannot be the "man of the house".

A not uncommon experience is that the child after the death of the parent may share the bedroom or bed with the parent of the opposite sex. It comes to our attention more often that the young boy, and sometimes not so young, is sharing the bed with his mother. We have known of many cases when the boy was as old as eleven, twelve and thirteen. This is too emotionally laden and too much for the developing ego to tolerate.

Separation and Divorce

Anyone who has been in practice any length of time will know of cases in which much disturbance has occurred. Emotions are generally charged leading up to the separation and divorce and it is most difficult for parents to be reasonable and rational in their attitudes toward each other. They may both love the children, but the common experience is that the children are to an extent onlookers from the sideline without sufficient emotional support. Their reactions will vary and some children may feel an excessive amount of guilt, believing that they are the cause of the breakup of the marriage. If one thinks about it, this would not be an unreasonable reaction when either parent may displace a lot of angry feelings for the spouse onto the children in the course of events leading up to separation or divorce.

There is always the question of loyalty, and regardless of how shabbily children may have been treated by either parent they will still have some affection for that parent. It does seem a heavy burden for the child to be expected to renounce one parent completely for the other, and it can result in a great deal of guilt, confusion and mistrust of other adults.

A really sticky problem is that of children being brought into court to testify against a parent. Though it is done one can hope that it is being done less than formerly. This is a very trying and shattering emotional experience for a child, and it is always desirable for a child's statements to be made in the quiet of an office without his having

to be subjected to the often histrionic, angry, charged atmosphere in the courtroom.

The continual harangue of threats of divorce over months or years can reduce a child to a stress animal. Sally was eleven, with basically attractive features, but an anxious fearful expression on her young face and a large bruise on her left arm. Mother and her real father were divorced, and Sally lived with her mother and stepfather, the second marriage having taken place when Sally was five or six. What was the trouble? She worried all the time, did poorly in school work, had few friends, was argumentative and hostile toward other students. What did she worry about? Her three brothers who lived with aged grandparents in a distant county. She couldn't sleep because mother and step-father argued and fought in the night threatening to divorce, and Sally was afraid he would kill her mother. Sometimes she went in their room to try to stop it, but he would beat her (and she showed other bruises). She was afraid he would come to her room and attack her there. What would happen to her if they separated? Would anyone take care of her?

A pathetic little girl who, if this continues, has little chance for healthy ego growth and who likely will be a prime subject for leaving home early, entering into an impulsive sado-masochistic marriage of her own. In so many of these kinds of life situations it seems that "the apple doesn't fall far from the tree".

When a Family Moves

Our population is a very mobile one with a big segment of any community changing its place of residence each year. It is a tribute to ego strengths of children and their families that such moves occur with such frequency and that adjustments are made without major upsets occurring. Nevertheless, upsets do occur with children grieving for their old friends and familiar surroundings to the extent that it interferes with their adaptation. It is generally difficult for adolescents to move, especially when one considers the importance of peer group for adolescents and the importance of maintaining their friends. The positive side is the fact that the young adolescent is old enough to intellectually understand the reasons for the move, to go through his grieving ahead of time, and to establish some means of staying in touch with old friends until new ones come along to fill the void. This they do by letter, telephone and occasional visits back to the former place while they make the emotional shift necessary to go on.

It is not always so with younger children, and especially the pre-school child who can become quite upset and confused with the sudden shift of boundaries and familiar objects. If parents are aware of the importance of that which is familiar to a young child they can devise many ways to make a move easier. Even so, in a children's psychiatric setting we are consulted quite frequently about a younger child whose family has moved and the child is extremely restless, has difficulty sleeping, has regressed to frequent temper tantrums, bedwetting and who may even run away in his confusion to try to find something familiar.

Deprivation

This word evokes thoughts about many kinds of deprivation to which young children are subject. With times more affluent it is not always deprivation of physical needs. In fact, if emotional support is supplied by parents the child can withstand much material deprivation.

In a children's clinic one is impressed by the number of children referred who have a variety of problems such as, restlessness, hyperactivity, apparent inability to learn academically, anti-social behavior, i.e., repeated stealing, running away and cruelty to animals and other children. In so many of these instances there is the common theme of a very shaky infancy and early childhood. Perhaps mother may have to work of neces-

sity and the children when very young have a great variety of mother figures to care or not care for them. The frequent history is the inconsistency and inconstancy of mothering which they had in their early years. On the other hand, for some of the young mothers who have children while they are in mid-adolescence themselves and who have not reached any level of maturity where they are able to nurture an infant, it may be the better choice for them to work and try to provide a substitute mother who can give consistent love and care when this is so important.

Many of these children that we see have the history of a broken home with no suitable substitute for the absent father or mother, and with this deprivation their psychological development has been malformed. There are additional problems if a parent is psychotic, psychopathic or a chronic alcoholic. In some of these instances the children suffer great ego and super-ego deficits in their psychological development and once they are past the pre-school years any kind of substitution or replacement attempt becomes increasingly less likely to yield an evenly functioning individual.

Early School Experience

The separation that must take place when a child goes to school is a critical time and it is a step that must be mastered for the child to be able to go ahead in his development. Fortunately, many nursery schools and elementary schools are becoming more aware of the normal ties existing between mother and young child and are taking this into account in making the separation easier. For instance, the teacher may visit in the home before a child enters school; the mother and child may visit the school and the classroom setting ahead of the opening of school so that the child can begin to become familiar with a widening world; the mother goes with the child to school the first few days, and may remain nearby if there appears to be any marked anxiety about separating; when the teacher sees a particular child becoming anxious she will signal the mother to enter the classroom and remain for awhile. In this way the transition is generally made without too much turmoil and if it is successful can avert the buildup of anxiety and panic in an immature ego and avoid problems later on. In instances of illness when a younger child has had to be out of school for awhile, these reassurances may have to be repeated while the child again makes the transition from the home to the school.

Miscellaneous

There are many other matters of an urgent nature that deserve attention that have not been mentioned: The child with distorted body image as a result of accident, surgery, or anomaly; the child who has experienced excessive parental interference in his development and has not been trusted enough to be allowed to explore and do things for himself at the appropriate age; the child who has experienced many kinds of overstimulating experiences such as the excessively seductive parent or the parent who beats or brutalizes a young child; abnormal endocrine development, such as the child with precocious puberty or delayed puberty and the psychological problems pertaining thereto, and the adoptive child who is curious about his origins.

No attempt has been made to provide an answer or formula for dealing with these many urgent and emergency psychological problems in childhood. There is no particular formula that would fit many of them. What has been conveyed, it is hoped, is that children are not "little adults" but are human beings in the process of ego development. As such, they do not perceive the world and its experiences, and are not equipped to do so, in the same way as adults. Their equipment is incomplete and therefore their perceptions and feelings about many of these things are quite different from ours. They are fragile, yet plastic. If we as phy-

(*Continued on page 569*)

Diagnostic Laboratory Medicine....

HARRY P. DALTON, Ph.D.
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Serratia as a Pathogen

Within the last ten years, there has been a dramatic increase in the number of Serratia isolates from clinical specimens. This increase has forced a reappraisal of the role of these bacteria in human infections, and as a result several studies have documented the virulence of the organism.[2,3]

At the Medical College of Virginia laboratories, the frequency of Serratia isolation has followed the national trend and is now commonly isolated from urine, sputum, wound and blood cultures. There are several possibilities that may account for this increased incidence. One is the resistance of the organism to antimicrobial agents; another may be an increase in Serratia contamination within the hospital environment. Perhaps the most significant factor accounting for the increased incidence is the diagnostic laboratories' ability to recognize this organism using the Edwards and Ewing Enterobacteriaceae classification scheme.[1] The characteristics used to define Serratia are shown in Table I. Pigmentation is not stressed since the majority of the isolates are non-pigmented.

Table I

Principal Identifying Characteristics for Serratia

Morphology	gram-negative bacillus
Glucose	positive
Oxidase	negative
Nitrate	positive
KCN	positive
Phenylalanine Deaminase	negative
Dulcitol	negative
Rhamnose	negative
Arabinose	negative

Table II lists the source and antimicrobial susceptibility pattern for 91 strains isolated in the first 3 months of 1970. Over half of these were from urine. These results are in agreement with the literature which points to the fact that these organisms demonstrate a low degree of invasiveness and often are associated with underlying conditions such as wounds, trauma, burns, malignancy, and indwelling catheter.[4]

Table II

Antimicrobial Susceptibility of Serratia Isolates*
January-March 1970

	Disc conc μ/ml	Urines % sensitive	Wounds % sensitive	Respiratory % sensitive	Blood % sensitive
Penicillin	10	0	0	0	0
Erythromycin	2	0	0	0	0
Methicillin	5	0	0	0	0
Ampicillin	10	0	0	0	0
Cephalothin	30	4	7	18	0
Streptomycin	10	9	7	54	40
Tetracycline	30	5	47	46	10
Chloram-phenicol	30	14	53	72	100
Gentamycin	10	100	100	90	100
Total number of strains		55	15	11	10

*Antibiotic Disc Diffusion Technique.

The antimicrobial susceptibility pattern confirms the high *in vitro* resistance that has been reported for the organism. Gentamycin has the greatest activity inhibiting 98% of the strains tested. It is interesting to note that Serratia from the urinary tract appears to be more resistant than isolates from other areas. However, this may not be significant due to the small number of strains isolated.

It should be emphasized that Serratia can be identified easily in the diagnosis laboratory and that such information is of value not only in treatment of the patient but also in studying the epidemiology of this organism as a cause of nosocomial infection.

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(Warning: may be habit forming)			

Brief Summary. Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.

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MENTAL HEALTH (*Continued from page 567*)

sicians can project ourselves into these situations and have a genuine feeling of how a particular situation can appear to a child at a particular stage of development, it is quite likely that we can in many instances help to devise ways and means of meeting a particular child's psychological needs. While some of our work is directly with the child, it is likely that the bulk of it is of an ongoing educational effort in our day-to-day contact with parents to help them understand and not lose sight of how children feel about critical events and situations in their lives. We need to aid and encourage parents to be more honest with their young children. They may be small, but children have many wonderings and feelings about the complexities of life's events. They need to have the freedom to talk about their feeling and to ask questions. They need some answers, but we don't even have to know all the answers to all the questions they ask. They can accept that of us if we are honest, rather than evasive, when we don't know. We can wonder with them about many things!

Simple discussions with a young child about the death of a pet, a friend or relative, appropriate responses to early questions about sex, explanations about being in the hospital and surgical procedures, recognizing for a young child his right to be angry with you, but that you will not let him hurt you, talks about winning and losing and how you play the game—all these and hundreds of other intimacies shared by young children and adults have an enormous immunizing value. If they can be done in honesty and frankness by adults, and it's not always easy, it means that the child from early life begins to build a solid view of the realities of life. Then, when he is up against some major psychological urgency or emergency he has some substances in his personality make-up for combating the noxious agents that will confront him, in much the same manner that his body has already grappled with the attenuated virus in vaccines and developed anti-bodies that enable him to withstand the virulent strains of the germs when they come along, without being overwhelmed or devastated.

Medicare (Part B)....

CURTIS J. KELLY
Administrator

Ambulance Service

Medicare requires that the vehicle used be specially designed and equipped for transporting the sick or injured. It is required to have customary patient-care equipment including (1) a stretcher, (2) clean linens, (3) first aid supplies, (4) oxygen equipment, and (5) other safety or lifesaving equipment as required by State or local authorities.

The ambulance crew, to qualify, must consist of at least *two* members. Those crew members charged with the care or handling of the patient must include one individual with adequate first aid training, i.e., training at least equivalent to that provided by the standard and advanced Red Cross first aid courses.

Re-usable devices and equipment such as backboards, neckboards and inflatable leg and arm splints are considered by Medicare as part of the general ambulance service and would be included in the charge for the trip. On the other hand, a separate reasonable charge based on actual quantities used may be recognized for non re-usable items and disposable supplies such as oxygen, gauze and dressings required in the care of the patient during the trip.

To be covered, ambulance service must be medically necessary and reasonable. (a) Medical necessity is established when the patient's condition is such that use of any other method of transportation is contraindicated. In any case in which some means of transportation other than an ambulance could be utilized without endangering the individual's health, whether or not such other transportation is actually available, no payment may be made for ambulance service. (b) A claim may be denied on the ground that the use of ambulance service was unreasonable in the treatment of the illness or injury involved.

As a general rule, only local transportation by ambulance is covered. In exceptional situations where the ambulance transportation originates beyond the locality of the institution to which the beneficiary was transported, payment may be made for such services only if the evidence clearly establishes that such institution is the nearest one with the appropriate facilities.

Ambulance service from an institution to the beneficiary's home is covered when his home is within the locality of such institution.

Occasionally, the institution to which the patient is initially taken is found to have inadequate facilities for treating him and he is then transported to a second institution having appropriate facilities. In such cases, transportation by ambulance to both institutions would be covered provided the institution to which he is being transferred is determined to be the nearest one with appropriate facilities.

The term "locality" with respect to ambulance service means the service area surrounding the institution from which individuals normally come or are expected to come from hospital or skilled nursing services.

The term "appropriate facilities" means that the institution is generally equipped to provide the needed hospital or skilled nursing care for the illness or injury involved. It is the institution, its equipment, its personnel and its capability to provide the serv-

ices necessary to support the required medical care that determines whether it had appropriate facilities. The individual physician who practices in a hospital is not a consideration in determining whether a hospital has appropriate facilities.

The fact that a more distant institution is better equipped, either qualitatively or quantitatively, to care for the patient does not warrant a finding that a closer institution does not have appropriate facilities.

Ambulance service to a physician's office is not covered.

If a Medicare beneficiary was pronounced dead by a legally authorized individual before the ambulance was called, no program payment may be made. When the beneficiary was pronounced dead after the ambulance called but before pick-up the service to the point of pick-up is covered. If otherwise covered ambulance services were furnished to a beneficiary who was pronounced dead while in route or upon arrival at the destination, the entire ambulance services are a covered expense.

For those of you who may be interested the Part B Manual, Section 6108.1 et. seq. provides detailed information concerning ambulance services and is available for your inspection in your nearest Social Security Office.

GIANT APPENDICOLITH—Seshanarayana-Keats

(*Continued from page 545*)

2. Felson, B., and Bernhard, C. M.: The Roentgenologic Diagnosis of Appendiceal Calculi. Radiology 49:178-191, 1947.
3. Childe, A. E.: Calcified Appendiceal Fecal Concretion in Childhood. Am. J. Roentgenol. 58:455-463, 1947.
4. Laforet, E. G., et al.: Acute Appendicitis with Radio-opaque Appendiceal Lithiasis. Am. J. Roentgenol. 65:867-877, 1951.
5. Berg, R. M., and Berg, H. M.: Coproliths. Radiology 68:839-844, 1957.
6. Brady, B. M., and Carroll, D. S.: Significance of the Calcified Appendiceal Enterolith. Radiology 68:648-653, 1957.
7. Killen, D. A., and Brooks, Jr., D. W.: Appendicolith in Patients Suspected of Having Acute Appendicitis. Am. Surg. 30:397-400, 1964.

Department of Radiology
School of Medicine
University of Virginia
Charlottesville, Virginia 22901

The Medical Society of Virginia . . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was held on Wednesday, June 17 at the Williamsburg Conference Center.

Members Present: Dr. William Grossmann, Dr. James M. Moss, Dr. F. Ashton Carmines, Dr. Dennis P. McCarty, Dr. Mack I. Shanholtz, Dr. Harry J. Warthen, Dr. Thomas S. Edwards, Dr. Raymond S. Brown, Dr. William S. Hotchkiss, Dr. William R. Hill, Dr. George J. Carroll, Dr. F. H. McGovern, Dr. John A. Martin, Dr. James C. Respess, Dr. W. D. Liddle, Jr., Dr. Carl E. Stark and Dr. Carl P. Parker, Jr.

Others Present: Dr. Arthur A. Kirk, Third Vice-President; Dr. Hiram Davis, Commissioner, Department of Mental Hygiene and Hospitals; Dr. W. Callier Salley, AMA Delegate; Dr. Kenneth R. Crispell, Dean, University of Virginia School of Medicine and Dr. Kinloch Nelson, Dean, Medical College of Virginia.

Virginia Hearing Foundation

Dr. Ralph Brawley, University of Virginia Speech and Hearing Department, discussed the financial hardships currently threatening the Foundation. This organization has been in existence since 1952 and was organized for the purpose of promoting and providing an early and accurate diagnosis of hearing disorders, prompt and adequate treatment of such disorders, advancement of training in speech pathology and audiology and audiological research.

The record of the Foundation has been such that the General Assembly voted to provide funds for its support during 1964-66, and again in 1968-70. Unfortunately, these funds were deleted from the current budget and the Foundation finds itself unable to operate.

It was then moved by Dr. Hotchkiss that The Medical Society of Virginia request the Governor to do everything possible to restore such funds as are necessary to reactivate the Foundation's program (approximately $40,000). *The motion was seconded and carried.*

Maternal Health TV Films

Dr. James Dunne, Director of the Department of Maternal and Child Health of the State Health Department and a member of the Society's Committee on Maternal Health, discussed a proposed series of public service TV films. The films are designed to be educational in nature and will cover the complete period from pregnancy to birth. The films would be of one minute duration and would probably not exceed twelve in number.

Council was advised that the project has the approval of the Committee on Maternal Health and expressed the hope that the Society would agree to be one of the sponsors. It was estimated that the Society's share of the cost would be somewhere between $2,000 and $3,000.

It was then moved by Dr. McCarty that The Medical Society of Virginia endorse the proposed program and support it financially in an amount not to exceed $3,000. *The motion was seconded and adopted.*

Physician's Assistants

Dr. Grossmann advised Council that many problems are certain to arise when physicians' assistants become active in the State. There is no legal definition of a physician's assistant and nothing in the Medical Practice Act pertaining to them in any way. It seems quite clear that a special committee is needed to work with the Board of Medical Examiners for the purpose of determining what regulations, controls, etc., will be needed to adequately handle the problem.

Dr. Carroll moved that the President-Elect be requested to appoint a Special Committee on Physicians' Assistants to work with the Board of Medical Examiners. *The motion was seconded and carried.*

It was then suggested that the Committee, when appointed, seek advice and guidance from similar committees already active in North Carolina, Colorado, etc.

Blue Cross-Blue Shield

Council was advised that a recent study conducted by a well known consultant firm had, according to recent press releases, resulted in certain personnel changes within Blue Cross-Blue Shield of Virginia. It was brought out that the Society had a very valid interest in the situation since it appoints twelve members of the Blue Shield Board. Although an of-

ficial explanation has not yet been released by the Joint Executive Committees, a detailed report is expected in the near future.

In view of these developments, the question was raised as to whether the Society's Blue Shield Commission should be reactivated. It was recalled that the Commission had touched on the advisability of having separate administrative officers for Blue Cross and Blue Shield. It was the general consensus, however, that the Society's Committee of Blue Shield Directors was sufficient.

Dr. Moss then moved that Dr. Fletcher Wright, Chairman of the Committee of Blue Shield Directors, be requested to submit to Council a complete report on the situation as soon as all the facts are available. The motion was seconded.

Dr. Hotchkiss then moved to amend the motion by advising Dr. Wright of Council's wish for immediate consideration by his Committee on the advisability of dividing the administrative duties of Blue Cross and Blue Shield. *The amendment was seconded and adopted.*

Dr. Moss's motion was then adopted as amended.

Virginia League for Planned Parenthood

Mrs. Leslie Cheek, Jr., President of the League, discussed the many problems our nation is facing as a result of the tremendous population growth. She stated that the time was now at hand for the growth rate to be reduced to zero.

Mrs. Cheek went on to say that the population problem is really a health problem of the greatest importance and that the League needs the understanding and assistance of Virginia physicians. At the present time, the League is reaching approximately 35,000 of 160,000 women who need family planning most. Its educational program is being well received.

Charles Howard, Executive Secretary of the League, informed Council that the League had developed and is distributing brochures on male sterilization, modern methods of birth control, etc.

The matter of a more liberal abortion law was discussed and it was learned that the League favors making abortions a personal matter between patient and physician. Mrs. Cheek mentioned the fact that there were at least 500 high school pregnancies last year among girls in the under age 19 group.

Mrs. Cheek then requested that Council give serious consideration to appointing a special committee to work with the League and provide advice and guidance on matters of mutual interest and importance.

Dr. Brown then offered a motion requesting the appointment of a special liaison committee to the Virginia League for Planned Parenthood. The motion was seconded.

Some fear was expressed that the appointment of such a committee might possibly link the Society to the League's views on abortion. It was the consensus, however, that the Society should simply state that it advocates no change in Virginia's present abortion law. As a matter of fact, the law, for the most part, is in keeping with the Society's Statement of Policy adopted in 1967.

The motion by Dr. Brown was then adopted.

AMA Dues

It was learned that an effort is being made to increase AMA membership dues from $70.00 to $150.00. Some concern was voiced over the size of the proposed increase—particularly since The Medical Society of Virginia has encountered considerable difficulty in increasing Virginia membership in AMA. It was brought out that many physicians use the high cost of membership as an excuse for not joining and some criticism has been received concerning expenditures.

Dr. Salley called attention to the fact that the AMA Board of Trustees recommends specific increases and the House must either accept or reject such recommendations. It is not permitted to substitute amounts of its own choice.

Dr. Liddle moved that the Society's AMA Delegates be requested to oppose any substantial increase in AMA dues. The motion was seconded.

A call for the question was made and this, in turn, was followed by substitute motion to leave the final decision to the Delegates. Dr. Edwards ruled the substitute motion out of order since the question had been called before its introduction. His ruling was supported by majority vote.

The original motion by Dr. Liddle calling for opposition to any substantial increase in AMA dues was then adopted.

Drug Abuse

It was Dr. Grossmann's feeling that the Society should concern itself with the drug abuse problem. He expressed the feeling that the proper approach would be to appoint a special committee which would be charged with the responsibility of determining the magnitude of the problem and how best the Society could become active.

It was then moved by Dr. Moss that a special committee on drug abuse be appointed. *The motion was seconded and adopted.*

AMA Resolution

Dr. Moss expressed concern over certain premature news releases by the Food and Drug Administration. He was especially concerned by a release having to do with tolbutamide which has created undue anxiety in diabetic patients taking the drug. He also mentioned the possibility that those physicians who continued to use the drug might become more liable for malpractice suits.

Dr. Moss then presented a resolution which he wished introduced in the House of Delegates of the American Medical Association during its June meeting. A motion to this effect was made and seconded.

There followed considerable discussion concerning the tolbutamide project. The thought was expressed that the proposed resolution might be amended in such manner as to suggest to the Food and Drug Administration that a more careful evaluation would seem advisable before final conclusions are drawn.

Dr. McCarty then moved that the resolution be amended in keeping with these suggestions. *The motion was seconded and carried.*

Dr. Moss's motion was then adopted as amended. The resolution as introduced in the AMA House of Delegates follows:

"Whereas, The Food and Drug Administration has created undue anxiety in diabetic patients by the premature news release on the results of a highly controversial experiment with tolbutamide; and

"Whereas, Adequate scientific basis for the recommendations that were contained in the news release is not yet available; and

"Whereas, Physicians who continue to use this drug in the previously accepted manner may be construed as acting in conflict with the recommendations of the Food and Drug Administration; therefore be it

"Resolved, That the American Medical Association urge the Food and Drug Administration to consult with clinical experts and give more consideration to the overall welfare of the public before it proclaims that a generally accepted method of treatment should be changed."

Guidelines for Nurses

Council was advised that the Virginia Nurses Association was seeking Society approval of certain guidelines for nurses in Coronary Care Units. The guidelines must be approved by all of the professional associations concerned before their publication is permitted.

After very careful consideration it was moved by Dr. Moss that the following guidelines for nurses in Coronary Care Units be approved. *The motion was seconded and adopted.*

"Hospitals in which Registered Nurses are employed to work in Coronary Care Units should establish the policies of nursing care within the framework of practice as defined by the institution's medical, administrative and nursing staff.

"Definition of Coronary Care Nurse: A Registered Nurse who has completed a qualified course of instruction, demonstration and supervision in which she is taught to identify arrythmias and safely perform defibrillation.

"A Coronary Care Nurse recognizes clinically and electrocardiographically asystole and initiates cardio-pulmonary resuscitation.

"If in accord with the hospital's policies, the Coronary Care Nurse may administer emergency medications upon the standing orders of a physician.

"If in accord with the hospital's policies, the Coronary Care Nurse may electrically countershock a patient, when she has made the electrocardiographic diagnosis of ventricular fibrillation or ventricular tachycardia with consequent loss of consciousness."

"A Coronary Care Nurse recognizes clinically and electrocardiographically the need for pacing and, if in accord with the hospital's policies, she institutes electronic pacing. (This does not include insertion of, or adjustment of, the internal pacemaker, which must be performed by a physician.)

"In order to provide for a high level of nursing competence, a continuing staff development program must be maintained. A record of the nurse's instruction shall be maintained by the hospital."

Dr. Hiram Davis

Dr. Davis announced that he would soon be leaving his post as State Commissioner of Mental Hygiene and Hospitals and expressed his appreciation for the cooperation and support he had received from Council over the years. Regret was expressed at Dr.

Davis's leaving and he was thanked for the excellent job he had done in upgrading Virginia's State hospital system.

Student Membership

Dr. Harry C. Bates, Jr., Chairman of the Committee Studying the Future Mission of the Society, reported that the Committee had spent many hours exploring the question of student membership. He stated that we are living in a changing world and that now, more than ever before, there exists a definite need for students, faculty and practicing physicians to effectively communicate. The young physician must be made a part of the medical organization in order that his talents and energy can be used in a constructive and beneficial manner.

Dr. Bates went on to say that making student membership possible would not be a pioneering effort since a number of other states have already taken such action. Colorado, Tennessee and Indiana are but a few.

It is the Committee's recommendation that a separate component medical society be established at each medical school and that all second, third and fourth year medical students be eligible for membership. There would be no dues as far as The Medical Society of Virginia is concerned and each society would be entitled to two delegates. Student members would be eligible to serve on committees and enjoy regular benefits of membership. Membership would, of course, be terminated upon graduation or when the member, for any reason, ceased to qualify as a student.

A question was raised as to whether component societies in the two schools would result in the dissolution of student AMA chapters. It was the consensus that student AMA chapters exist at the will of the student body and that the organization of component societies would probably have little effect.

It was then moved by Dr. Martin that the report and recommendations of the Committee Studying the Future Mission of the Society be adopted and submitted to the Judicial Committee for the next step in the implementation process. *The motion was seconded and carried.*

AMA Caucus

The advisability of having Virginia's delegates to AMA caucus each morning during AMA meetings was discussed. There was general agreement that such caucuses would be of value. It was also suggested that other members of the Society attending the AMA sessions be invited to sit in and participate in the discussions.

A motion was introduced requesting that AMA delegates, officers and members of Council be invited to attend any caucuses held in connection with AMA meetings. *The motion was seconded and carried.*

Bicentennial Celebration

Dr. Grossmann reported that he had been contacted by a special Philadelphia Committee planning an exhibit on historical and commemorative aspects of medicine for the bicentennial celebration of the signing of the Declaration of Independence. The Committee is inviting each state to prepare some type of exhibit commemorating the progress of medicine in its particular area.

A suggestion was made that the Society consider an exhibit on Dr. Walter Reed. It was learned that Dr. William Bean, formerly of Charlottesville and now residing in the midwest, has compiled a great amount of material on Dr. Reed and might possibly be amenable to making some of it available. The Executive Secretary was requested to discuss the matter with Dr. Warthen.

Committee Assignments

Dr. Moss informed Council that a new approach to Committee appointments would be made this year. It is his intention to direct a questionnaire to all committee members, presidents of local societies, etc. The purpose of the questionnaire would be to obtain information not presently available concerning special interests, committee evaluations, etc. Dr. Moss expressed the hope that more young physicians could be appointed to the various committees and stated that he would welcome any and all recommendations from members of Council.

Dr. Grossmann pointed out that Dr. Moss had made a special point to attend nearly all committee meetings held thus far and expressed the hope that future presidents-elect would follow his lead.

Retirement Plans and Mutual Funds

The Insurance Committee recommended that the Members' Retirement Plan be amended in such manner as to permit investment of contributions in mutual funds as well as annuities.

In order to accomplish this objective, it was moved that the following resolution be adopted.

"Resolved, That The Medical Society of Virginia Members' Retirement Plan be amended to allow participants to elect to have contributions made on their behalf invested in Mutual Fund shares as well as in the group Annuities currently available."

The motion to adopt the resolution was seconded and carried.

Himler Report

Very careful consideration was given to expressions from the various Districts with reference to the report of the AMA Committee on Planning and Development (Himler Report). Reports from over the state seem to indicate that the majority of those who have studied the report are in favor of the minority report written by Dr. Budd. Dr. Martin stated that Dr. McCausland had contacted all members of the Society's House of Delegates and found that the vast majority favored the minority report. Dr. Stark stated that Dr. Budd's report also seemed to be favored in the 9th District.

Dr. Hotchkiss introduced the following resolution which was seconded and adopted:

"Whereas, We are unable to endorse, without extensive revision, the full report of the committee on planning for the AMA (The Himler Report). These reservations apply to the language of the overall discussion as well as to the recommendations, and

"Whereas, We do endorse, as more nearly reflecting our view, the minority report (The Budd Report), therefore, be it

"Resolved, Our delegates to the AMA are authorized to discuss, negotiate, debate and to vote according to their best judgment with these guidelines."

OEO Community Action Program

A grant application by the Central Virginia Community Action Agency for a special Rural Community Health Project was considered. The Project would feature a rural community health center designed to provide comprehensive and preventive health services to 20,000 poor individuals in rural central Virginia. Council was told that the program would not interfere with the private practice of medicine or in any way overlap activities of the State Department of Health. The Project would result in a commitment by the University of Virginia School of Medicine to a new form of medical care delivery.

It was agreed that the grant application should have Council's approval contingent upon the absence of objections by Dr. Shanholtz and the Department of Health. Also, it was recommended that every effort be made to obtain the cooperation and participation of all private practicing physicians in the area concerned. It was requested that the Society's interest in the Project be made known to the sponsoring agency and a request made for any progress reports which might be issued.

Medicare

Council learned that some difficulty has been encountered in obtaining Medicare case reviews at the local society level. Much of the difficulty can undoubtedly be attributed to the large areas involved and the problem of arranging meetings of the appropriate committees. It was suggested that component societies be advised of the problem and informed that failure to review cases within a reasonable time will make it necessary for such reviews to be handled by The Medical Society of Virginia.

There being no further business, the meeting was adjourned.

Robert I. Howard, *Secretary*

APPROVED:

William Grossmann, M.D., *President*

PRELIMINARY PROGRAM

150th Anniversary Meeting

The Medical Society of Virginia

The John Marshall
Richmond, Virginia
October 11-14, 1970

Preliminary Program

150th Anniversary Meeting

The Medical Society of Virginia

The John Marshall

Richmond, Virginia

October 11-14, 1970

SUNDAY, OCTOBER 11
10:00 A.M.
COUNCIL
Washington Room

2:00 P.M.
HOUSE OF DELEGATES
Roof Garden

SPECIAL EVENTS

SUNDAY, OCTOBER 11

Virginia Dermatological Society
9:00 A.M.—Business & Scientific Session (Jackson Room)

Virginia Society of Anesthesiologists
10:00 A.M.—Business & Scientific Session (Lee Room)
1:00 P.M.—Luncheon (Chateau Room #1452)

Council, The Medical Society of Virginia
10:00 A.M.—Business Session (Washington Room)
12:30 P.M.—Luncheon (Byrd Room)

House of Delegates, The Medical Society of Virginia
2:00 P.M.—Roof Garden

International College of Surgeons, Virginia State Surgical Division
5:00 P.M.—Business Session & Social Hour (Washington Room)

VaMPAC
7:30 P.M.—Banquet (Virginia Room)

MONDAY MORNING, OCTOBER 12

9:00 A.M.

Section "A"—Roof Garden

Welcome and Preliminary Announcements—Harold I. Nemuth, M.D., Chairman, Committee on Arrangements.

Memorial Service

SCIENTIFIC PROGRAM

Dennis P. McCarty, M.D., Front Royal, Presiding

Symposium on Cardiovascular Diseases—

9:00 A.M.—Fixed and Mobile Coronary Care Units—Richard S. Crampton, M.D., Roy Stillerman, B.A., Robert F. Aldrich, B.A., and Regina C. McCormack, M.D., Charlottesville.

9:15 A.M.—Surgical Correction of Congenital Heart Defects—Carolyn H. McCue, M.D., John B. Tingelstad, M.D., Louise W. Robertson, M.D., H. Page Mauck, Jr., M.D., Walter J. Eldredge, M.D., Lewis H. Bosher, Jr., M.D. and Richard R. Lower, M.D., Richmond.

9:30 A.M.—Abdominal Aneurysms—Richard N. deNiord, M.D., Lynchburg.

9:45 A.M.—Rehabilitation of Cardiac Patient—Reno R. Porter, M.D., Richmond.

10:00 A.M.—Panel: Question and Answer Session—Reno R. Porter, M.D., Moderator.

10:30 A.M.—Intermission to Visit Exhibits

Symposium—Anti-Infectious Agents—

11:00 A.M.—Newer Antibacterial Drugs—Invited Speaker—Richard J. Duma, M.D., Richmond.

11:15 A.M.—Antiviral Chemotherapy—Jack M. Gwaltney, Jr., M.D., Charlottesville.

11:30 A.M.—New Drugs for the Systemic Mycoses—Read F. McGehee, Jr., M.D., Richmond.

11:45 A.M.—Problems in the Use of Other Antimicrobials—Edward W. Hook, M.D., Charlottesville.

12:00 Noon—Panel Discussion: John P. Utz, M.D., Richmond, Moderator.

9:00 A.M.

Section "B"—Jackson Room

J. Andrews White, M.D., Virginia Beach, Presiding

9:00 A.M.—Elective Mutism — Douglas F. Powers, M.D. and Gilbert Silverman, M.D., Richmond.

This paper will describe the clinical disorder of elective mutism and the treatment techniques. The Virginia Treatment Center for Children has treated five such cases successfully, and this is a larger sample than has been reported before from one setting. Special attention will be directed to differential diagnosis of this disorder especially in relation to milder cases, as well as the mutism associated with hysteria and schizophrenia. The relationship of the duration of the existing symptomatology and the degree of the impairment as well as the length of treatment necessary to relieve the symptoms will be delineated.

9:15 A.M.—Pectus Deformities in Children —George A. Harkins, M.D. and William Morgan, M.D., Norfolk.

Confusion exists as to the management of anterior thoracic deformities in infants and children. The natural history of protrusion and depression deformities of the sternum is presented. Methods of evaluating pectus deformity in an individual child, and measuring its severity, are presented. Indications for surgery as well as selection of patients for sternoplasty will be discussed.

9:30 A.M.—Variations of Sexual Development in Childhood and Adolescence—Reuben B. Young, M.D., Richmond.

Experiences in the evaluation and treatment of variations in sexual development will be presented with illustrative case histories seen during the past seven years in the Pediatric Endocrinology Section at the Medical College of Virginia. Case presentations will be supplemented by color slides of clinical conditions as well as chromosomal daryotypes and other laboratory data where appropriate. Therapeutic recommendations and results will be presented.

9:45 A.M.—Diabetes in Children — Invited Speaker—Elsa C. P. Paulsen, M.D., Charlottesville.

10:00 A.M.—Panel: Question and Answer Session —Reuben B. Young, Jr., M.D., Richmond, Moderator.

10:30 A.M.—Intermission to Visit Exhibits

Symposium on Obstetrical & Gynecological Problems—

11:00 A.M.—Septic Shock in Obstetrics and Gynecology—Guest Speaker—James G. Sites, M.D., Chairman, Department of Obstetrics and Gynecology, George Washington University School of Medicine, Washington, D. C.

11:15 A.M.—Questions.

11:20 A.M.—Cardiac Complications of Pregnancy—Guest Speaker—Andre E. Hellegers, M.D., Professor, Department of Obstetrics and Gynecology, Physiology and Biophysics, Georgetown University School of Medicine, Washington, D. C.

11:35 A.M.—Questions.

11:40 A.M.—Panel—Therapeutic Abortion—Guest Speakers—(in addition to two previous speakers)—William E. Easterling, M.D., Associate Professor, Department of Obstetrics and Gynecology, University of North Carolina School of Medicine, Chapel Hill, N. C., and The Honorable John William Crews, Assistant Attorney General, Commonwealth of Virginia. Christopher J. Murphy, Jr., M.D., Alexandria, Moderator.

MONDAY AFTERNOON, OCTOBER 12

2:00 P.M.

General Session—Roof Garden

Arthur A. Kirk, M.D., Portsmouth, Presiding.

Symposium on Thyroid—

2:00 P.M.—Introductory Remarks—Kenneth R. Crispell, M.D., Charlottesville.

2:10 P.M.—Diagnosis of Thyroid Disease—Invited Speaker—John T. Dunn, M.D., Charlottesville.

2:25 P.M.—Management of Hyperthyroidism—Guest Speaker—John G. Wiswell, M.D., Professor of Medicine, University of Maryland School of Medicine, Baltimore, Maryland.

2:45 P.M.—Surgical Treatment of Thyroid Disease—Jaquelin M. Harrison, M.D., Richmond.

3:00 P.M.—Panel: Questions and Answers—Kenneth R. Crispell, M.D., Moderator.

3:00 P.M.

Reference Committee #1—Byrd Room
Reference Committee #2—Lee Room
Reference Committee #3—Monroe Room

SPECIAL EVENTS

MONDAY, OCTOBER 12

Virginia Diabetes Association
7:30 A.M.—Breakfast (Chateau Room #1452)
VaMPAC
7:30 A.M.—Breakfast—Board of Directors (Lee Room)
Virginia Society of Internal Medicine
7:30 A.M.—Breakfast (Byrd Room)
Virginia Flying Physicians Association
1:00 P.M.—Luncheon (Lee Room)
American College of Radiology, Virginia Chapter
1:00 P.M.—Luncheon (Monroe Room)
Virginia Society for Pathology
1:00 P.M.—Luncheon (Byrd Room)
Virginia Surgical Society
1:00 P.M.—Luncheon (Washington Room)
Virginia Obstetrical & Gynecological Society
1:00 P.M.—Luncheon (Patrick Henry Room)
The Medical Society of Virginia
6:30 P.M.—Cocktails (Patrick Henry & Jackson Rooms)
7:30 P.M.—Banquet (Virginia Room)

TUESDAY MORNING, OCTOBER 13

9:00 A.M.

Section "A"—Roof Garden

Charles M. Caravati, M.D., Chairman, Program Committee, Presiding.

SCIENTIFIC PROGRAM

Symposium on Dermatological Manifestations of Medical Disorders—Edward P. Cawley, M.D., Charlottesville, Moderator.

9:00 A.M.—Pregnancy, the Pill and the Skin—Peyton E. Weary, M.D., Charlottesville.

9:15 A.M.—Cutaneous Manifestations of Gastrointestinal Disorders — Invited Speaker—Louis E. Harman, Jr., M.D., Charlottesville.

9:30 A.M.—Vitiligio, an Immune Disorder —W. Kenneth Blaylock, M.D., Richmond.

9:45 A.M.—Cutaneous Manifestations of Internal Cancer—Guest Speaker—Clayton E. Wheeler, Jr., M.D., Professor of Mermatologic Medicine, University of North Carolina School of Medicine, Chapel Hill, N. C.

10:00 A.M.—Open Forum—Questions from the audience.

10:30 A.M.—Intermission to Visit Exhibits

Symposium on Arthritis and Joint Disorders —Elam C. Toone, Jr., M.D., Richmond, Moderator.

11:00 A.M.—Systemic Lupus Erythematosus—John S. Davis, IV, M.D., Charlottesville.

11:15 A.M.—Juvenile Rheumatoid Arthritis—Duncan S. Owen, Jr., M.D., Richmond.

11:30 A.M.—Diagnosis and Treatment of Gout—John J. Kelly, III, M.D., Richmond.

11:45 A.M.—Painful Non-Articular Musculo-Skeletal Disorders — Charles L. Cooke, M.D., Richmond.

12:00 Noon—Panel: Question and Answer Session.

9:00 A.M.

Section "B"—Jackson Room

T. Winston Gouldin, M.D., Norfolk, Presiding.

9:00 A.M.—Surgery for Peptic Ulcer at McGuire V.A. Hospital—C. Cooper Bell, Jr., M.D., James S. Wolf, M.D. and Yale H. Zimberg, M.D., Richmond.

The operative experience for peptic ulcer disease in a veteran population is reviewed for the period 1960 to 1970. Sven hundred sixty-six operations were performed in seven hundred thirty-four patients with twenty-three operative deaths occuring (3.0% mortality). Four hundred sixty-six patients had elective vagotomy and antrectomy for peptic ulcer, with a resultant operative mortality of 0.86%. Surgical indications and operative procedures are analyzed.

9:20 A.M.—Superior Vena Cava Obstruction—Thomas W. Monaghan, M.D., Roanoke

This paper includes a brief review of literature on this subject. The etiology, course of disease, treatment and prognosis are also discussed. Our usual treatment plan is high dose steroid therapy and intensive radiation therapy using Telecobalt source.

9:40 A.M.—Skiing Injuries (1959-69)—Robert H. Brumfield, Jr., M.D., Roanoke.

This paper involves an evaluation of 766 skiing injuries at the Homestead, Hot Springs, Virginia, between 1959 and 1969. It reviews all current literature on this subject with analysis of such important factors as type of skiing equipment, condition of the snow, weather conditions, difficulty of slopes, time of day, light conditions, ski equipment, and an analysis of

bindings and boots. Analysis is made of the types of injuries involved, and is broken down into fractures, dislocations and soft tissue injuries. Examples of cases are presented, along with some details of the treatment.

10:00 A.M.—Injured Hand—Jerome E. Adamson, M.D., Charles E. Horton, M.D. and Richard A. Mladick, M.D., Norfolk.

Hand injuries comprise 40% or more of the patients seen in a general hospital emergency room. Because of the extreme importance in obtaining ideal results a planned approach to post-injury care of the hand is presented. This includes the basic importance of atraumatic technique in the reconstruction, the value of the postoperative dressing, elevation, splinting, and sling techniques to obtain good healing, mobilization of the post-injured hand with graded exercises, passive and active and dynamic splinting, and factors related to reaching an ideal end point in hand function. Appropriate color diagrams and slides will be used in the presentation.

10:20 A.M.—Questions and Answers.

10:30 A.M.—Intermission to Visit Exhibits

Symposium on Parkinson's Disease

11:00 A.M.—The Pathology and Diagnosis —Cary Suter, M.C., Richmond.

11:20 A.M.—Treatment with L-Dopa—Guest Speaker—William E. O'Malley, Ph.D., M.D., Assistant Professor of Neurology, Georgetown University School of Medicine, Washington, D. C.

11:40 A.M.—Surgical Treatment — Jerry H. Greenhoot, M.D., Richmond.

12:00 Noon—Panel: General Discussion—Cary Suter, M.D., Richmond, Moderator.

TUESDAY AFTERNOON, OCTOBER 13

2:00 P.M.

General Session—Jackson Room

Dennis P. McCarty, M.D., Front Royal, Presiding.

Symposium on Adolescents and Drugs

Invited Speakers—George M. Bright, M.D., Richmond, Moderator, and John Buckman, M.D., Charlottesville.

Case presentations and demonstrations of selected patients.

SPECIAL EVENTS

TUESDAY, OCTOBER 13

American Association of Public Health Physicians, Virginia Chapter
7:30 A.M.—Breakfast (Patrick Henry Room)

Virginia Industrial Medical Association
7:30 A.M.—Breakfast (Lee Room)

Virginia Academy of General Practice
1:00 P.M.—Annual Luncheon (Patrick Henry Room)

American College of Physicians, Virginia Section
1:00 P.M.—Luncheon (Washington Room)

House of Delegates, The Medical Society of Virginia
3:30 P.M.—Roof Garden

University of Virginia Medical Alumni Association
6:30 P.M.—Reception (Patrick Henry Room)

Medical College of Virginia Medical Alumni Association
6:30 P.M.—Cocktails and Banquet (Virginia Room)

WEDNESDAY MORNING, OCTOBER 14

9:00 A.M.

Virginia Room

William Grossmann, M.D., Petersburg, Presiding.

SCIENTIFIC PROGRAM

Symposium on Delivery and Financing of Medical Care—

9:00 A.M.—The Neighborhood Health Center — Guest Speaker — Milton Levine, M.D., Associate Director, Section of Community Medicine, Presbyterian-St. Luke's Hospital, Chicago, Ill.

9:20 A.M.—Individual Practice System—Guest Speaker—Donald C. Harrington, M.D., President, Foundation for Medical Care of San Joaquin County, Stockton, California

9:40 A.M.—Prepaid Group Practice—Guest Speaker—Ernest W. Saward, M.D., Associate Dean for Extramural Affairs, University of Rochester School of Medicine, Rochester, N.Y.

10:00 A.M.—Intermission to Visit Exhibits

10:30 A.M.—National Health Insurance —Guest Speaker—Max W. Fine, Executive Director, Committee for National Health Insurance, Washington, D. C.

10:50 A.M.—Private Insurance Pools—Guest Speaker—Daniel W. Pettengill, Vice-President, Group Division, Aetna Life and Casualty Company, Hartford, Conn.

11:10 A.M.—Tax Credit for Health Expenses (Medicredit) — Guest Speaker—Russell B. Roth, M.D., Speaker, House of Delegates, American Medical Association, Erie, Pa.

11:30 A.M.—Panel: Questions and Answers.

SCIENTIFIC EXHIBITS

DIABETES MELLITUS: CURRENT CONCEPTS—James M. Moss, M.D., DeWitt E. DeLawter, M.D., Malcolm M. Martin, M.D., Lillian Recant, M.D., and C. Robert Meloni, M.D., Alexandria and Washington, D. C.

BEHAVIOR MODIFICATION WITH EMOTIONALLY DISTURBED CHILDREN—Douglas F. Powers, M.D., Richmond

PRESERVATION OF ORAL FUNCTION AFTER MAJOR HEAD AND NECK SURGERY—Richard A. Mladick, M.D., Charles E. Horton, M.D., and Jerome E. Adamson, M.D., Norfolk, and Thomas O. Hodges, M.D., and Henry J. Kalwaic, D.D.S., Kecoughtan.

THE CONCOMITANT USE OF T-3 (TRIOSORB—125) AND T-4 (TETRASORB—125) IN PREGNANCY—Ira D. Godwin, M.D., Fairfax

TWO HEREDITARY OSSEOCUTANEOUS SYNDROMES—GARDNER'S SYNDROME AND OSTEOPOIKILOSIS WITH DERMATOFIBROSIS LENTICULARIS DISSEMINATA—Peyton E. Weary, M.D., and Gloria F. Graham, M.D., Charlottesville

ENGINEERING CONTRIBUTIONS TO MEDICINE—A BREAKTHROUGH IN REDUCING NEWBORN MORTALITY—Leon J. Arp, Ph.D., and R. E. Dillon, Blacksburg

TRANSTRACHEAL ASPIRATION—David W. Pecora, M.D., Richmond

MATERNAL HEALTH PROGRAM IN VIRGINIA—James J. Dunne, M.D., Richmond

SESQUICENTENNIAL OF THE MEDICAL SOCIETY OF VIRGINIA AND THE RICHMOND ACADEMY OF MEDICINE—Walter Adams, M.D., Charles Caravati, M.D., Randolph Trice, M.D., and Harry J. Warthen, M.D., Richmond

PART B OF MEDICARE—Curtis J. Kelly, J.D., Administrator for Virginia, Richmond

VIRGINIA INFORMATION SYSTEM—Mrs. Janet Minnerath and Walter W. Walker, Richmond

GLAUCOMA SCREENING DEMONSTRATION—Marion K. Humphries, Jr., M.D., DuPont Guerry III, M.D., and Margaret B. Gill, Richmond

AFFILIATED ORGANIZATIONS

SOUTHERN MEDICAL ASSOCIATION, Birmingham, Alabama

VaMPAC, Richmond

VIRGINIA MEDICAL ASSISTANTS ASSOCIATION, Richmond

TECHNICAL EXHIBITS

AYERST LABORATORIES, New York, New York

BLUE SHIELD OF VIRGINIA, Richmond

BRISTOL LABORATORIES, Syracuse, New York

BURROUGHS WELLCOME & COMPANY, Tuckahoe, New York

CIBA PHARMACEUTICAL PRODUCTS, Summit, New Jersey

COCA-COLA USA, Atlanta, Georgia

DAVID A. DYER INSURANCE AGENCY, Roanoke

ENCYCLOPEDIA BRITANNICA, Chicago, Illinois

G. C. FRENCH AGENCY, Richmond

GENERAL MEDICAL CORPORATION, Richmond

LAKESIDE LABORATORIES, Milwaukee, Wisconsin

ELI LILLY AND COMPANY, Indianapolis, Indiana

MEAD JOHNSON AND COMPANY, Evansville, Indiana

MEDICAL DATA SERVICES, Richmond

MEDICAL PLAN OF VIRGINIA, Richmond

MERCK SHARP & DOHME, West Point, Pennsylvania

NATIONAL CLINICAL SERVICES LABORATORIES, Arlington

ORTHO PHARMACEUTICAL CORPORATION, Raritan, New Jersey

PFIZER LABORATORIES, New York, New York

WM. P. POYTHRESS & COMPANY, Richmond

A. H. ROBINS COMPANY, Richmond

SANDOZ PHARMACEUTICALS, Hanover, New Jersey

W. B. SAUNDERS COMPANY, Philadelphia, Pennsylvania

SMITH, KLINE & FRENCH LABORATORIES, Philadelphia, Pennsylvania

SMITH, MILLER & PATCH, New York, New York

E. R. SQUIBB & SONS, New York, New York

THE STUART COMPANY, Pasadena, California

UNITED MEDICAL LABORATORIES, Portland, Oregon

THE UPJOHN COMPANY, Kalamazoo, Michigan

WINTHROP LABORATORIES, New York, New York

WYETH LABORATORIES, Philadelphia, Pennsylvania

DELEGATES TO THE 1970 MEETING THE MEDICAL SOCIETY OF VIRGINIA

Where no name is listed it is indicative that no delegate or alternate was reported in time for publication.

Delegates	*Alternates*
Accomack	
Dr. W. A. Eskridge	Dr. D. F. Fletcher
Albemarle	
Dr. A. P. Booker	Dr. C. H. Gleason
Dr. J. L. Guerrant	Dr. G. M. Harbert, Jr.
Dr. J. S. Horsley, III	Dr. F. E. Taylor
Dr. W. C. McLean	Dr. M. S. Wheby
Dr. W. McK. Wallenborn	Dr. M. C. Wilhelm
Alexandria	
Dr. W. E. Baker	Dr. R. H. Anderson
Dr. H. C. Kuykendall	Dr. H. H. Ferrell, Jr.
Dr. T. L. Lucas	Dr. J. B. Gilbert
Dr. C. J. Murphy, Jr.	Dr. R. S. Gillinson
Dr. F. P. Titus	Dr. B. L. Gilmore
Alleghany-Bath	
Dr. C. F. Ballou, III	Dr. R. P. Carroll, Jr.
Dr. W. J. Ellis	Dr. L. R. Denius
Dr. W. W. Harris, Jr.	Dr. G. L. Fischer
Dr. D. S. Myers	Dr. Scherer, Jr.
Dr. W. C. Nunley	
Amherst-Nelson	
Arlington	
Dr. W. D. Dolan	Dr. H. L. Bastien
Dr. G. J. Fisher	Dr. J. H. Judson
Dr. M. A. Puzak	Dr. R. P. Nirschl
Dr. W. L. Weyl	Dr. J. O. Romness
Augusta	
Dr. T. L. Gorsuch	Dr. DuB. Egleston
Dr. P. P. Powers	Dr. E. D. Nolley
Dr. M. J. Tenney, Jr.	Dr. J. B. Sherry
Bedford	
Dr. O. B. Darden, Jr.	
Botetourt	
Buchanan-Dickenson	
Dr. J. C. Moore	Dr. R. W. Hess
Dr. J. P. Sutherland	Dr. T. D. McDonald
Charlotte	
Culpeper	
Dr. O. K. Burnette	Dr. J. B. Jones
Dr. R. L. Cassidy	Dr. H. G. Kennedy, Jr.
Danville-Pittsylvania	
Dr. B. H. Byerly	Dr. J. W. Milam
Dr. G. V. Thompson	Dr. G. B. Updike, Jr.
Fairfax	
Fauquier	
Dr. J. B. Hutt, Jr.	Dr. J. F. Denton
Floyd	
Dr. F. C. Bedsaul	Dr. L. V. Marshall
Fourth District	
Fredericksburg	
Halifax	
Dr. D. F. Sheriff	
Hampton	
Hanover	
Dr. W. S. Hume	Dr. M. T. Lowry
Henry	
Dr. C. P. Sherman	Dr. F. T. Renick
Dr. B. C. Toms, Jr.	
James River	
Lee	
Dr. T. S. Ely	Dr. B. H. Owens
Loudoun	
Louisa	
Lynchburg	
Mid-Tidewater	
Dr. R. B. Bowles	Dr. W. B. Brown
Dr. M. H. Harris	Dr. H. W. Decker
Dr. W. H. Hosfield	Dr. H. W. Felton
Dr. S. C. Olsson	Dr. H. B. Hudgins
Dr. N. Oster	Dr. S. N. Ransone
Dr. W. C. Salley	Dr. H. L. Shinn
Dr. T. E. Smith	
Dr. A. L. VanName, Jr.	
Newport News	
Dr. D. J. Cracovaner	Dr. M. L. Binder
Dr. P. Hogg	Dr. W. H. Kretz
Dr. E. B. Mewborne	Dr. Q. J. Legg
Dr. H. L. Williams	Dr. W. H Sipe
Norfolk	
Dr. J. W. Creef	Dr. T. Adler
Dr. J. B. Gahagan	Dr. D. N. Anderson
Dr. F. T. Given, Jr.	Dr. O. W. Hoffler
Dr. T. W. Gouldin	Dr. H. M. Horden
Dr. B. I. Lidman	Dr. R. K. Maddock
Dr. C. N. VanHorn, Jr.	Dr. R. J. Nold
Dr. J. A. Vann	Dr. D. E. Sly
Northampton	
Dr. W. F. Bernart	Dr. J. R. Mapp

Delegates	*Alternates*
Northern Neck	
Northern Virginia	
Dr. W. B. Crawford, Jr.	Dr. J. C. Hortenstine
Dr. J. R. Holsinger	Dr. C. H. Iden
Dr. D. H. McNeill, Jr.	Dr. H. W. Miller, Jr.
Dr. G. H. Smith	Dr. C. L. Riley
Dr. J. P. Snead, Jr.	
Dr. J. R. York	
Orange	
Dr. J. G. Bruce, Jr.	Dr. D. H. Miller
Portsmouth	
Prince William	
Richmond	
Dr. J. S. Ashworth	Dr. G. W. Atkinson
Dr. W. M. Belle	Dr. R. W. Bedinger
Dr. R. W. Dodd	Dr. A. W. Blount, Jr.
Dr. L. A. Frederick	Dr. R. V. Bowers
Dr. D. K. Gilliam	Dr. T. R. Butterworth, Jr.
Dr. Harold Goodman	Dr. C. W. Byrd
Dr. W. R. Irby	Dr. E. B. Carpenter
Dr. J. J. Kelley, III	Dr. R. K. Duley
Dr. D. L. Litchfield	Dr. W. B. Lundeen
Dr. W. W. Martin, Jr.	Dr. J. D. Markham
Dr. E. C. Mathews	Dr. P. Middleton
Dr. R. G. McAllister	Dr. M. J. Page
Dr. R. A. Michaux	Dr. J. E. Stevens
Dr. R. E. Mitchell, Jr.	Dr. C. E. Sutton
Dr. H. I. Nemuth	Dr. A. E. Talman
Dr. W. T. Tucker	Dr. E. R. Trice
Dr. H. H. Ware, III	Dr. H. H. Wilson, Jr.
Dr. C. Williams, Jr.	Dr. L. C. Zacharias
Roanoke	
Dr. T. E. Donnelly	Dr. H. W. Brubaker
Dr. G. S. Hurt	Dr. E. R. Johnson, Jr.
Dr. R. S. Hutcheson, Jr.	Dr. D. P. Minichan, Jr.
Dr. F. M. Jacobs	Dr. D. E. Pierce
Dr. R. L. A. Keeley	Dr. K. D. Tuck
Dr. C. A. Young, Jr.	Dr. D. R. Williams

Delegates	*Alternates*
Rockbridge	
Rockingham	
Dr. J. T. Glick, Jr.	Dr. J. E. Gardner
Dr. G. M. Nipe	Dr. J. T. Hearn
Scott	
Southwestern	
Dr. J. H. Early, Jr.	Dr W. S. Barton
Dr. W. C. Elliott	Dr. G. Dalton
Dr. B. Fawcett	Dr. L. E. Dunman
Dr. J. L. Givens	Dr. J. J. Eller
Dr. B. C. Grigsby	Dr. G. Q. Gilmer
Dr. C. C. Hatfield	Dr. P. C. Hendrix
Dr. C. F. Johnston, Jr.	Dr. M. G. Martin
Dr. G. B. Kegley	Dr. G. W. McCall
Dr. C. D. Moore, Jr.	Dr. W. F. McGuire
Dr. M. C. Newton, Jr.	Dr. J. S. Shaffer
Dr. J. H. Smith	Dr. G. R. Smith, Jr.
Dr. W. B. Waddell	Dr. W. J. Stanford
Dr. W. W. Walton	
Stuart	
Dr. S. P. Massie	Dr. J. Kastretsios
Tazewell	
Dr. R. A. Abernathy, Jr.	Dr. M. E. Johnston
Tri-County	
Virginia Beach	
Dr. J. P. Charlton	
Dr. K. K. Wallace, Jr.	
Williamsburg-James City	
Dr. H. G. Hager, Jr.	
Dr. G. L. Oliver, Jr.	
Wise	
Dr. J. M. Straughan	
Dr. L. C. Strong, Jr.	

REPORTS FOR 1970 ANNUAL MEETING

Executive Secretary-Treasurer

While we can't say that things became any better for medicine during the past year, we can say that they really did not become much worse. We still have problems with Medicare and the cost of operating Medicaid is about as expected, but we now have the benefit of experience to help us along in the months to come. The planners are still busy as ever and National Health Insurance is in the works, but medicine is not sitting around waiting for whatever the future brings—not for a minute. Some very sound and carefully thought out proposals have already been brought to the attention of the Congress as well as the public. "Medicredit" is a good example.

Medicine has admittedly taken its lumps over the last few years but it hasn't thrown in the proverbial towel and cried "enough". To its everlasting credit it has sized up the situation, gathered its forces and set about to adjust its activities to the needs of our times. Certainly this is true where our own Medical Society of Virginia is concerned and the next few months will bring forth some interesting proposals. Many of them will come from the special Committee Studying the Future Mission of the Society which has spent many hours and days—not to mention a few weekends—reviewing the Society's past and present activities and developing a blueprint for action designed to keep Virginia physicians in a position of leadership throughout this period of adjustment.

Two of this Committee's most important recommendations have to do with membership for medical students and a new and more effective Committee structure. The amendments to the Constitution and By-Laws necessary to implement these proposals are covered in the report of the Judicial Committee and every member should study them in detail.

From an administrative standpoint, this has been a most interesting year and we would like to share with you a few of the highlights.

President: Another real leader has taken his place beside those Presidents of the past who are remembered for their courage and determination to keep The Medical Society of Virginia moving ever forward. Dr. Grossmann traveled to the far corners of the State with his message of inspiration and call for involvement. His quest for new ideas and methods carried him even into our neighboring states to see firsthand how others are meeting the challenge. He attached great importance to the need of developing and cementing a close working relationship with allied groups and organizations, and acted many times as his own emissary.

Dr. Grossmann has little time for a no win-do nothing philosophy. While he deplores many of the events which have brought medicine face-to-face with a serious physician shortage and a crisis in the delivery of medical care—not to mention increased Federal involvement in things medical—he isn't one to sit idly by and accept the situation without doing something about it. It is his sincere feeling that if things need changing, medicine should take the lead in solving its own problems. His Presidential year has been dedicated to achieving that end.

Council: The 1969-70 Council has been the busiest in the Society's history. Four meetings have already been held and others are scheduled for September and October. Detailed minutes have been published in the Virginia Medical Monthly.

Finances: Your Society remains in a very sound financial condition—always good news during these days of inflation. It is true that our expenditures are greater but so are our accomplishments. Your Society has never been so active—and in so many arenas. We say without hesitation that your dues represent as good an investment as you will find anywhere these days. A complete financial report will be published in the December issue of the Virginia Medical Monthly.

Membership: Your Society continues to grow—a fact of which we are very proud. But—the picture is not as bright as it could be. In fact, we believe there are at least 300-400 physicians outside the ranks who should be lending their strength to the cause of organized medicine. Won't you help bring them in? Membership facts and figures follow:

July 31, 1969			3,609
New	220		
Reinstated	13		
Increase		233	
Deaths	48		
Resigned	32		
Dropped	44		
Decrease		124	
Net Increase			109
July 31, 1970			3,718

AMA: It is never very pleasant to admit a failure, but we have no alternative where AMA membership is concerned. Quite frankly, we are most concerned over the apparent lack of interest on the part of Virginia physicians and are trying to determine the causes. We know of no organization more dedicated to the cause of medicine and it belongs to every physician in the Nation.

But—AMA is what its members make it. If it is to really achieve results and exercise strong and positive leadership, it must have enlightened participation by its physician members. Participation is the key to under-

standing and makes for motivation and growth—factors which will not only improve AMA but also enrich the lives of physicians.

Last year we reported that 2,200 members of The Medical Society of Virginia also belonged to AMA. The total this year is 2,352—a very disappointing figure. Virginia has never lost a battle by default and this is no time to start. So, let's make sure that we retain all three of our Delegates to AMA and throw our full support behind their efforts to chart a national course acceptable to all Virginia physicians.

Personnel: There were no changes in the staff during the past year. It has been proved over the years that "low turnover" personnel will do the best job and we believe this is the main reason we have gone so many years with no staff additions. We must be truthful, however, and tell you that this situation might change in the next few months. Serious thought is being given to improving our public relations and overall communications effort and this will probably require an additional staff member.

The Executive Secretary takes this opportunity to express his sincere appreciation to Miss Watkins, Mrs. Edmunds, Mrs. Stockmar, Mrs. Hurt and Mr. Moore for helping make his job the most pleasant and rewarding of all. It is a privilege to work with such able individuals.

Virginia Medical Monthly: Life does have its problems and the Editors of the Virginia Medical Monthly are having their share. It isn't easy to produce a high quality scientific publication month after month under normal conditions—much less when printing costs continue to climb and the advertising market flounders in uncertainty. Consequently, it would appear that our Managing Editor, Miss Watkins, has accomplished a minor miracle in keeping the overall cost of the Monthly within reasonable bounds. In this connection, we refer you to the annual report of the Editorial Board which also appears in this issue. Dr. Warthen does his usual good job in telling the Monthly's story.

Meetings: Your Society was represented at many local, state and national meetings during the past twelve months. They include: Both sessions of the AMA House of Delegates, AMA Institute, National AMPAC Workshop, Conference of State Mental Health Committee Chairmen, National Rural Health Conference, 4-H Club Awards ceremony, annual meeting of the Virginia Association of Medical Assistants, annual meeting of Professional Convention Management Association, Conference of Presidents and Other Officers of State Medical Societies, annual meeting of Virginia Council on Health and Medical Care, annual meeting of the Medical & Chirurgical Faculty of Maryland—and many others.

Your Public Relations Committee once again sponsored Senior Day Programs for senior medical students at the University of Virginia and Medical College of Virginia and our special Committee on the Medical Aspects of Sports presented an excellent Conference in connection with the annual coaching clinic of the Virginia High School League.

Committees: It has been said, and properly so, that Committees represent the life blood of a society such as ours. Any doubts as to the truth of that statement were certainly erased during the past twelve months by the activities of many Committees. While we will not attempt to cover them all, we would call attention to the unbelievably thorough job being done by the Committee Studying the Future Mission of the Society, the deliberations of the Medical Education Committee with reference to continuing education, the work of the special committee responsible for the Society-sponsored medical services survey, the effective job being done by the Insurance Committee in its close supervision of nine group programs, the uncomplaining manner in which the special Review Committee handles scores of requests from commercial carriers (an average of three a week!)—and on and on!

Be sure to read the reports on the following pages. They may not make the "best seller" lists, but they are a lot more interesting—and important!

The Future: Remember the "good old days"? Those were the days when the Army and Navy only had to contend with Notre Dame—when an ambush only occurred in movies of the old west—when physicians went about their job of treating the sick without being told what to do, when to do it and how to do it. Those were the days before Medicare, Medicaid, peer review, OEO, CHAMPUS, Comprehensive Health Planning, HEW, computers, the Women's Liberation Movement, and you name it!

Needless to say, those Utopian days are gone—possibly forever. All that is left is the future—a sobering thought if ever there was one. If we were to predict those matters which would be of greatest concern to the profession during the next twelve months we would list them in this order:

(1) National Health Insurance
(2) Professional liability (malpractice)
(3) Delivery of health services and the role of physicians' assistants
(4) Increasing Governmental pressure (threatened and otherwise) with reference to fees

There are others, of course, but these four are enough to keep us stocked with sleepless nights for a long time to come.

Dr. Palmer: It isn't often that we have an opportunity to report the election of a Virginia physician to a high AMA office. This makes it especially nice to report that Dr. Richard E. Palmer, Alexandria, was elected to the AMA Board of Trustees during the June meeting of that Association. Dr. Palmer, a Past-President of The Medical Society of Virginia, was elected unanimously and his presence on the Board will add an extra measure of strength and leadership at a most crucial time.

We take this opportunity to repeat our invitation to visit with the staff at your headquarters building and get the answers to your questions "firsthand". You will prob-

ably be surprised to learn of the many services your Society can provide.

ROBERT I. HOWARD
Executive Secretary-Treasurer

AMA Delegates

The 1969 Clinical Session of AMA was held in Denver during November and the 1970 Annual Meeting in Chicago during June. The Society was represented by three delegates at both sessions of the House.

We are particularly pleased to report that Dr. Richard E. Palmer, Alexandria, was elected to the Board of Trustees. Dr. Palmer, a Past-President of The Medical Society of Virginia, is the first Virginian to serve on the Board since 1954. His election was unanimous.

The various actions of the House have been thoroughly covered in the Journal of the American Medical Association and the American Medical News. Should you require detailed information on any specific action, you should write the State office.

Included among the many items considered by the House were the so-called Himler Report, National Health Insurance, unification of internships and residencies, professional liability insurance, involvement of nurses in medical care, drug reactions and controls, general practitioners and staff privileges, communications, physician ownership of nonprofit hospitals, AMA membership for osteopaths in military service, hazards of chiropractic, dangers of environmental pollution, the plight of prisoners of war in North Vietnam, therapeutic abortion, hazards of smoking, etc.

A Virginia introduced resolution having to do with premature laws releases by the Food and Drug Administration was adopted without opposition. The House agreed that the medical profession should be assured a voice in decisions made by FDA in order to prevent agency action contrary to public interest.

The House saw fit to increase the AMA Annual Dues by $40.00. This means that, effective January 1, 1971, dues for active membership in AMA will be $110.00. We hasten to assure the membership that the increase was considered very carefully and is necessary if AMA is to do the job expected of it.

A caucus of the Virginia delegation was held on two occasions during the annual meeting at which times the various matters before the House were discussed. Officers and members of Council attending the meeting also attended the caucus sessions—as well as several other Virginia physicians who made the trip. Fifteen members of the Society attended one caucus! As a result of such representation, it was possible to effectively cover all Reference Committee meetings.

Once again we urge all members of the Society to attend a meeting of the AMA House of Delegates. Those attending the June session came away with a much greater appreciation of the tremendous job being done by that body.

It is a privilege to represent The Medical Society of Virginia in the AMA House of Delegates.

W. LINWOOD BALL, M.D.
ALEXANDER MCCAUSLAND, M.D.
W. CALLIER SALLEY, M.D.

Membership

Your Committee is pleased to report that no problems have been referred to it during the past year and, consequently, no meetings have been necessary.

Once again, the names of all new members have been published in the Virginia Medical Monthly and we shall, in the interest of time and space, not list them here for a second time. We would, however, urge each new member to participate in the activities of the Society and do his part in sharing its future course. Also, we should explore the many benefits of membership and become knowledgeable concerning services available through the State office.

Your Committee is proud and honored to nominate our President, Dr. William Grossmann, for honorary active membership in The Medical Society of Virginia. Dr. Grossmann joins the list of distinguished Presidents who have guided the Society through some of the most crucial days in its long history.

FRANK D. DANIEL, M.D.
JAMES A. KIRKLAND, M.D.
R. CAMPBELL MANSON, M.D., *Chairman*

Legislative

This report covers the 1970 session of the General Assembly and about 165 bills or resolutions considered by the Assembly which were of interest to the medical profession. Meetings of the Legislative Committee and the work of legal counsel in preparation for the Assembly and during the session concentrated on those bills which affected the profession the most or which the Society or its Committees had endorsed or opposed. A small alteration can turn an innocuous bill into one of considerable import to us, and continual attendance during part of the Assembly was necessary so that we might keep ourselves advised not only of the legislation which was being considered but of the actions with respect to that legislation contemplated by the members.

It could be said with some fairness that the members of the General Assembly looked more kindly on our profession at this session than they did in 1968. This is in part due to the fact that at least two members who, in 1968, had introduced legislation which we considered quite dangerous, were not present, but it may also be attributable to the establishment by members of our Society of a better relationship with their legislative representatives.

Some of the legislation invites more detailed treatment, but we have tried to be concise. Physicians should make special reference to such items as the abortion law and any statute requiring the reporting of gunshot wounds. Copies of these can be made available to members of the Society if required. Unless otherwise indicated, legislation will become effective on July 1. If a bill became effective we have given its chapter number. If a resolution was agreed to this can be determined from the language of the report.

Board of Medical Examiners

Chapter 69 (HB 62) permits the Board to use the FLEX examinations, puts pharmacology in Part I of the

examinations, deletes homeopaths from the chapter, broadens the reciprocity provisions of the chapter and the definition of the practice of osteopathy, allows licensure of pre-1944 graduates of unlicensed medical schools, removes some of the restrictions on professorial licensing, and provides for the licensing of some foreign medical school graduates.

Medical Education

State dental scholarships have heretofore been awarded upon condition of postgraduate employment with the Department of Mental Hygiene and Hospitals of the State Health Department, and medical scholarships have been similarly conditioned upon agreement that after graduation the recipient will engage in the practice of family medicine in an area of the State certified by the State Health Commissioner as an area of need. In the alternative, the commissioner can direct that the scholarship application be discharged by employment in either of such departments. Chapter 735 (HB 981) offers employment in the Department of Welfare and Institutions as a third alternative.

By HJR 73 the General Assembly directed the Board of Visitors of VCU to maintain the identity of MCV as an individual college within the framework of VCU.

A resolution (HJR 96) calling for a commission study of ways and means of making medical scholarships available to more State citizens in order to increase the number of physicians in the State was reported by the Rules Committee, but never acted on.

Chapter 294 (SB 341) calls for appointment by the Governor of a Committee on Education for Health Professions and Occupations advisory to the State Council of Higher Education.

Professional Corporations and Associations

Chapter 77 (HB 231) permits the organization of professional corporations so as to facilitate deferral of federal taxation of a portion of professional income set aside for retirement. SB 382 would have amended the existing Professional Associations Act to permit one person to associate with himself. This bill, which had the same basic purpose as the professional corporations bill, died in a house committee after HB 231 had passed both houses.

Nursing, Nursing Homes, and the Aged

Chapter 653 (HB 306) completely rewrites the section which provides nursing scholarships so as to increase the maximum award from $300 to $1,000 and so as to let the number of scholarships available depend on the total appropriation. Chapter 116 (HB 417) provides a new Nursing Practice Act. It was amended by the House General Laws Committee so as to exempt personnel working under a doctor's or nurse's direction from licensure requirements. HB 1048 would have established state financial aid for schools of nursing but never got out of committee.

Chapter 775 (HB 673) provides for licensure of nursing home administrators, and appears to be a measure to comply with federal medicaid requirements.

Chapter 602 (SB 496) permits Welfare and Institutions to expend state and federal funds for geriatric care.

Mental Health

Chapter 346 (HB 518) includes mental retardation in the community health services programs heretofore authorized. Chapter 384 (HB 319) establishes a scholarship fund (monies to be appropriated separately) for studies in professions and skills dealing with the treatment and care of the mentally ill and the mentally retarded. Chapter 46 (HB 462) gives superintendents the same control over voluntary admittees as they have over those committed.

HB 491 would have required commitments to be made to the nearest mental hospital.

Chapter 673 (HB 524), which was recommended by the Medical Society, abolishes judicial certification so that no person will be committed without physician participation in the procedure. It also changes compensation for the physician from $50.00 a day to $25.00 a hearing.

HB 318 and SB 217 would have changed the name of the State Hospital Board to the Mental Health Board, but the former never got out of committee and the Senate and the House could not agree on amendments to SB 217, so it did not pass. SB 402, HB 954 and HB 1024, to permit the State Hospital Board to pay a higher salary scale, did not pass.

Chapter 502 (HB 320) continues the Commission on Mental, Indigent and Geriatric Patients.

Chapter 437 (SB 218) includes domiciliary care facilities for geriatric patients with the meaning of the term "Hospital" as used in the State Hospital Survey and Construction Law.

Chapter 383 (HB 315) authorizes the State Hospital Board to set up hospitals on donated land in or near six different cities.

Chapter 280 (SB 215) establishes a Mental Health Professional Advisory Board to advise the State Hospital Board.

HB 333 would have required that the personal history in court examinations for insanity be completed by the examining physician.

Chapter 640 (HB 94) raises the fee of the expert appointed in criminal insanity proceedings from $30.00 to $50.00.

Mental examination of a person convicted of a criminal offense indicating sexual abnormality has been entirely within the discretion of the court, but Chapter 62 (HB 329) will permit counsel to obtain such examination of the defendant. Persons found guilty of sex-related crimes would have been advised by the presiding judge to seek psychiatric treatment, and such treatment would have been made available, under HB 1062.

SB 456 would have rewritten those provisions of the Code relating to payment of the expenses of the care and treatment of the mentally ill.

Chapter 758 (HB 779) provides a special fund for funds collected by the Department of Mental Hygiene and Hospitals on and after July 1, 1972. SB 390 and HB 1022 would have appropriated funds from the general fund for mental health purposes separate from and supplementary to the General Appropriations Act.

Health

Chapter 439 (SB 257) broadens the description of serv-

ices for which the State Board of Health receives medicaid reimbursement.

Chapter 526 (HB 739) says that the health certificate required by school personnel may be furnished within twelve months before the first day of school rather than 60 days before beginning work.

Chapter 470 (HB 44) makes a number of changes in the Workmen's Compensation Laws including the addition of pneumoconiosis as a scheduled disability, and a new requirement that the doctor furnish to interested parties copies of reports made to other interested parties.

Hospitals

The Society supported financing for the construction of hospitals, but the funds were not appropriated.

Chapter 490 (HB 224) continues the study of the medical facilities and resources available in Roanoke and other communities and their utilization in medical education.

HB 268 would have removed the immunity of charitable hospitals from suit (for up to $50,000.00) by paying patients. This was narrower than similar bills in previous years and was passed by the House but died in the Senate Courts of Justice Committee. SJR 34 would have directed a study of the doctrine of charitable immunity, but it died in the Senate Rules Committee.

Chapter 742 (HB 1082) creates a Richmond Eye and Ear Hospital Authority whose Board of Directors is composed of 12 members, six appointed by the Board of Visitors of VCU and six appointed by the Board of Directors of Richmond Eye Hospital.

Chapter 710 (HB 826) authorizes VCU to enter an agreement with the Richmond Eye Hospital for the construction and operation of a medical institute or facility in the Richmond area.

Chapter 150 (HB 663) permits hospital commissions to dissolve.

Chapter 554 (HB 1087) gives hospital authorities all powers granted generally to corporations.

An effort (HB 1002) to increase State participation in the cost of hospitalization and medical care of the medically indigent, at a rate not less than 75 per cent of the contract rate, died in committee.

The General Assembly enacted Chapter 720 (HB 893) to prohibit strikes and work stoppages at hospitals, and turned back HB 760 which would have lessened the penalty imposed on government employees for striking.

Drugs

The most far-reaching of the many drug bills introduced was one recommended by the Governor's study commission (Chapter 650; HB 271). It completely rewrites the pharmacy chapter of the Code, and, in doing so, would have brought the licensing of physicians to practice pharmacy completely under the discretionary control of the Board of Pharmacy. The Pharmacy Association was advised of our opposition to this change and amendments to restore the provisions of the present law to the bill were offered to and adopted by the House Committee on General Laws. The chairman of that Committee appointed a subcommittee whcih coordinated most of the various drug bills and, where appropriate, incorporated them in HB 271. There was more debate about the penalty sections than about any other part of the bill, but it appears that, in its final form, the bill made possession of marijuana and amphetamines a misdemeanor and made second offense possession of these drugs and first offense possession of other narcotics a felony, the court having wide discretion in sentencing.

HB 16 and HB 938 would have permitted various officials to require the Chief Medical Examiner to analyze any substance for the presence of narcotics, but neither bill got to the floor of the House. SB 222 would have made the duly attested certificate of a chemist performing an analysis for the State admissible in preliminary hearings and prosecutions for violation of the Uniform Narcotic Drug Act, but was vetoed.

HB 8 would have made manufacture or possession of LSD a felony. SB 23 and HB 964 would have defined LSD as a narcotic. SB 24 would have amended the Uniform Narcotic Drug Act to put cannabis and marijuana in a separate article so as to permit imposition of lesser penalties for violations. SB 470 would have classified marijuana as a depressant or stimulant drug. HB 966 would have granted immunity from criminal responsibility to witnesses in narcotics prosecutions. HB 142 and HB 1083 would have amended the penalties section of the Uniform Narcotic Drug Act.

HB 988 would have required the quantity and price of drugs to be shown on the prescription and on the container label.

SB 7 would have given localities the option to require medical examination of students suspected of being under the influence of alcohol or drugs. HJR 5 would have directed the Department of Education to formulate a narcotics education program for voluntary use in the public schools. HJR 122, which was agreed to, asks local school boards to intensify their program for the education of school children as to the harmful effects of drug abuse and to require closer supervision of the school scene.

Chapter 506 (HB 395) changes the Division of Alcohol Studies and Rehabilitation into the Bureau of Alcohol and Drug Studies and Rehabilitation. HB 963 and HB 829 would have created a Bureau of Narcotics and Bureau of Drug Abuse Control, respectively, but neither bill passed. HB 429 to create a council on drug abuse was vetoed by the Governor who had appointed such a council on his own initiative.

Sex Education

Halfway through the session, opposition to sex education in the public schools manifested itself in the form of four bills, all introduced on the last day for the introduction of general bills, and each taking a different tack. HB 1044 would have prohibited sex education until after grade nine and would have forbidden surveys and sensitivity training until after the twelfth grade. HB 1085 would have required the State Board to approve materials to be used, would have prohibited classroom lectures or discussions of sex for two years, and would have prohibited surveys. Neither of these bills was reported by House Education, but HB 935 which would have made sex education a voluntary matter and HB 810, simply requiring State Board approval of such materials, were re-

ported. The former was stricken from the House calendar, and the latter got as far as the Senate Education Committee which failed to report it. That Committee did report SJR 61, however, which creates a Committee of ten to be made up from the House and Senate Education Committees to confer with the State Board of Education as to problems arising in connection with sex education programs in the public schools and report thereon to the Governor and the General Assembly by September 1, 1970.

Children

Chapter 232 (HB 498) further extends the power of the courts to grant judicial consent for surgical or medical treatment of minors. Chapter 577 (SB 255) enables 18-year-olds to donate blood.

HB 888 would have enabled the courts to sentence a man who was guilty of battery of his wife or child to hard labor for 90 days to 12 months. HB 870 would have broadened the immunity which attaches to the making of reports of child abuse, but it did not pass. Chapter 718 (HB 887) adds probation officers to the lists of persons who are required to report instances of child abuse.

HB 944, which purported to require all children to be vaccinated, died in the Senate Finance Committee. HB 907 would have extended provisions for special classes for home bound children to those who are home bound by reason of an illness, injury or other cause. HB 923 would have relieved the parents of any mentally deficient child who was 21 years of age, or that had been in a state hospital for ten years, of the expense of the care of such a child at the hospital. It would also have relieved from liability the parent of a mentally deficient child when such parent was 60 years of age or over and would have limited the liability in any event to 10% of net federally taxable income. In any case, if the child had been in the hospital for more than three years, the rate charge was not to exceed 25% of per capita cost for maintenance. This bill was not reported by the Health, Welfare and Institutions Committee which did report a bill to limit the parents' liability for care of a mentally deficient child to liability for one who was under 21 (HB 969). This bill did not reach its third reading in the House.

The Handicapped

Chapter 496 (HB 270) provides for special education for children with impaired vision.

Chapter 615 (SB 269) amends the statute which authorizes localities to reimburse parents for the special education of deaf children, so as to call for state participation in the program.

HJR 1 directs a VALC study as to whether there should be a service bureau for the hard of hearing.

HB 90 would have provided for education and training for handicapped children by the adoption of a Handicapped Children's Act.

HB 845 would have authorized local welfare boards to offer protective services for the disabled, but it was stricken from the calendar. HB 1005 would have provided the visually handicapped with equal right of access to public accommodations even though accompanied by guide dogs, would have placed an extra burden of care on drivers with respect to blind persons, and would have made it the official policy of the State to employ the visually handicapped and otherwise physically disabled in public service, unless the particular disability prevented performance of the work involved, but it was not reported by the Committee.

Chapter 539 (HB 891) requires that consideration be given to the needs of the physically handicapped in the construction of any building involving the use of State or local public funds.

By SJR 36, the General Assembly created a committee to study the needs of all handicapped children in Virginia.

Chapter 123 (HB 904) eases the residential for eligibility for aid to the blind.

Drunk Driving

HB 181, HB 466, Chapter 511 (HB 522) and SB 15 sought to bring the breath test to Virginia. The HBs were given a public hearing at which there was testimony in opposition to any kind of alcohol test—resulting in considerable sentiment against the legislation. At a subsequent Senate Committee public hearing of SB 15 and of SB 76 to reduce from .15 to .10 the level at which a presumption would arise, the Society supported both bills and excellent testimony was received by the Committee. SB 15 was amended to make the breath test optional for the person arrested and both bills passed the Senate. HB 181 and HB 466 died in committee. SB 15 died after considerable amendment only because the Senate and the House could not agree on the amendments to the bill. HB 522 (Chapter 511) did pass, however, and will provide the breath test as a screening device. This should give us some experience with the breath test in Virginia upon which future legislation might be built. SB 76 was turned back by the House Courts of Justice Committee. SB 50 would have enabled the Court to grant limited driving privileges upon first conviction of drunk driving and HB 974 would have provided greater flexibility as to the period of suspension of the driving permit for drunk driving. HB 975 would have made it unlawful to operate any motor vehicle within eight hours of consuming an alcoholic beverage. HB 68 would have made driving with .05 blood alcohol content the offense of impaired driving rather than .10 as at present.

Sales Tax

The following sales tax bills were left in the Finance Committees to which they were originally referred:

HB 104 exempting non-prescription drugs.

HB 26 and SB 391 exempting food.

SB 100 for a $9.00 rebate of income taxes on account of the sales tax on food.

HB 679 and SB 377 for a credit or refund of income taxes for the sales tax on food.

HB 106 to exempt food, non-alcoholic beverages, and non-prescription drugs, and to tax manufacturing supplies and tools.

SB 292 to exempt sales to non-profit nursing homes.

HB 959 to exempt Boy Scouts and Girl Scouts.

HB 179 and HB 372 to tax whiskey.

HB 1031 exempting fire and rescue squads was left in the House Finance Committee which reported HB 159 exempting rescue squads only. HB 159 and HB 881 exexempting fishermen and HB 965 exempting diabetic insulin were left in the Senate Finance Committee. After receiving the approval of the House, SB 232, taxing all personal services except the healing arts, and HB 431, to extend the tax to personal services and sales of realty, both died in the Senate Finance Committee.

The only exemption amendment to win approval was Chapter 198 (SB 14), limiting the liability of the blind who operate vending stands and other business enterprises to the sales tax actually collected by them.

Traffic Safety

Chapter 263 (SB 61) makes the use of studded tires in wintertime permanently permissible.

SB 352 would have permitted an inference of negligence from the failure of a motorist to use his seat belt.

Chapter 99 (HB 427) requires motorcyclists to wear helmets.

Chapter 28 (HB 216) requires motorcyclists to wear face shields.

Insurance

Once again, a resolution (HJR 43) would have directed a VALC study as to whether the State should pay hospital and health insurance premiums for State employees.

Three Senate bills would have affected Blue Cross and Blue Shield. SB 156, to subject their contracts and rates to regulation by the SCC, died in committee. SB 351, to tax their prepayments, was amended and passed by the Senate but died in House Committee. HB 808 would have required any plan for prepayment of hospital or medical services to itemize to the subscriber all payments made under the plan.

HB 347 would have prohibited subrogation in accident and sickness insurance policies or hospital or medical service prepayment plans.

Transplants

The Uniform Anatomical Gift Act, Chapter 460 (HB 69), which the Society supported, has been enacted and should provide adequate procedure where there was none before. HB 575, a housekeeping bill to straighten out some language in the transplant statute, was passed by the House and reported by Senate Courts of Justice Committee, but fell before a violent attack when it came up for consideration on the floor of the Senate.

Miscellaneous

SB 248 would originally have increased the fees of medical examiners to $25.00. This was amended in the Senate to $20.00 but was amended again in the House, and when neither house could agree the bill failed to pass.

Chapter 622 (SB 325) raises the fee for taking blood alcohol samples from $5.00 to $10.00.

Chapter 493 (HB 427) permits the court, in any action wherein physical or mental condition of a party is at issue, to order a physical examination upon motion of the adverse party.

HB 291 would have permitted the use of the deposition of a member of a rescue squad who was at the scene of an accident in the performance of his duties.

Chapter 531 (HB 781) requires physicians and others treating gunshot wounds to report such fact together with the wounded person's name and address, if known.

SB 19 would have provided that the Statute of Limitations for personal actions should begin with the discovery of the injury.

Chapter 511 (SB 154) and Chapter 217 (SB 155) are the hearing aid dealers' licensure bills supported by the Society.

After lengthy public hearing, the Senate and the House finally agreed upon a relatively liberal abortion statute, Chapter 508 (HB 495), which is compatible with the recommendations of AMA and the Medical Society as to the form any such legislation should take if adopted. The bill is in its nature an exemption to a criminal statute and it was extensively amended. Because of this and because physicians who expect to perform abortions will have to establish certain procedures or routines under the statute, those who are interested in the legislation should get copies before it becomes effective. HB 744 would have set up procedures for sexual sterilization of persons having hereditary mental illness or mental deficiency even though such persons were not confined in state institutions.

HB 835 would have limited to actual necessary travel expenses the compensation which physicians employed by the state may receive for testifying, but it was vetoed. Under HB 1064 physical examination for persons confined in jail for more than twenty-four hours would have been mandatory. Chapter 630 (SB 415) provides that persons sentenced to the Bureau of Correctional Field Units shall be required to do such work as they are capable of doing, in the opinion of the physician examining them pursuant to law, and says that no physician shall excuse the prisoner from all work unless he is incapable of performing any of the work.

Existing sections of the Code permit local governing bodies to declare that firemen's respiratory diseases or heart diseases are presumed to have been suffered in the line of duty. SB 493 would have made this option universal and mandatory and it passed the Senate but died in House General Laws.

HJR 76 encourages the State Health Department to support new methods for providing medical care through community and neighborhood health centers. HJR 104 creates a 15 member commission on the shortage of family physicians, the membership of which is to be appointed by the Governor.

* * * *

The Committee would like to express its appreciation to Dr. Hagood and Dr. Reid for the attention they gave to matters of interest to the profession during this last session. Their presence in the Assembly has been of great value to the Medical Society and to the viewpoint of medicine.

WILLIAM A. PENNINGTON, M.D., *Chairman*

Publication

The Virginia Medical Monthly has received and published an unusually large number of excellent professional articles during the past year. Three special issues have also appeared (Virginia Regional Medical Program, The MCV Issue and The Norfolk Centennial and Norfolk General Hospital Issue) which have delayed the appearance of some articles unrelated to these special numbers but we expect to return to the regular sequence of publication of papers by early fall.

The Committee has endeavored to project the financial status of the VMM to cover the final three months (July, August, September) of the fiscal year which are not yet available in order that a true picture may be obtained for the entire 12 months. As matters now stand, our anticipated income from all sources will total $42,620, whereas our disbursements will total $50,467.50. This will represent a deficit of $7,847.50.

During a five year period (1955-1960) our annual income exceeded our outgo by as much as $14,000 when the VMM salaries and journal subscribers were included. This was largely due to extensive advertising in our journal by major pharmaceutical houses. The pattern of advertising by the larger drug companies has changed drastically during the past decade for not only have they restricted their ads to a degree but they now funnel their major accounts into the medical journals with the largest circulation. This means that the major portion of advertising goes to magazines like *MD, Medical Economics,* etc., which are received gratis by every practicing physician in the country. The numerous medical weekly newspapers which have sprung up and go to every active physician also divert much of the advertising which earlier went to state journals.

The recurring deficit which the Virginia Medical Monthly incurs, in common with all of the state medical journals, is offset in great measure by the numerous activities the VMM carries out on behalf of The Medical Society of Virginia. As the official organ of the State Society notices regarding State meetings, proceedings of Council and the House of Delegates, committee reports (such as the present one), scientific papers presented at annual meetings, as well as special features which appear each month in the form of CPCs, public and mental health columns, new laboratory methods, cancer aids and Women Auxiliary activities, to mention an incomplete list, are all of value to the members of the Society.

The VMM, in conjunction with 33 other state medical magazines, participates in the State Medical Journal Advertising Bureau which acts as an agent for the journals in obtaining advertisements. It is the feeling of the Bureau that there will be a trend upward in drug advertising in these state journals of limited circulation in view of the active and diverse steps they are now taking. We trust they are successful in this endeavor. Meanwhile your Council has been requested by the journal to determine if it desires the VMM to curtail various activities to lessen the deficit and if so, to what degree this should be done.

The Publication Committee is very hopeful that state medical journals will receive a larger percentage of medical advertising during the coming year so that the Virginia Medical Monthly will not have to limit its activities materially.

H. J. Warthen, M.D., *Chairman*

Judicial

Your Committee, as requested by Council, submits the following proposed amendments to the Constitution and By-Laws of The Medical Society of Virginia:

AMENDMENTS TO CONSTITUTION

Article III

After the second sentence, insert

> "Provision may be made for component student societies to be made up of students in medical schools approved by the American Medical Association."

Delete the period at the end of the third sentence and add

> "of component societies, and, to the extent applicable, shall govern members of any component student societies established."

(These amendments and the amendments to Article IV and Article VII enable the Society to permit active membership by medical students by amendment to the by-laws.)

Article IV

Change the period at the end of the second sentence to a comma and add

> "and for active membership by medical students."

Article VI

Delete the last sentence and substitute the following:

> "The Speaker, or in his absence, the Vice-Speaker of the House of Delegates shall be an ex-officio member of the Council. The Editor and State Health Commissioner shall be ex-officio members without vote."

(This amendment limits the right to vote to elected council members.)

Article VII

Change the first sentence to read as follows:

> "The House of Delegates shall be the business and legislative body of the Society, and its membership shall consist of the delegates elected by the component societies and any component student societies chartered by the Society, the President, President-Elect, First Vice-President, members of the Council, Past Presidents of the Society, officers of the American Medical Association who are members of the Society, and delegates of the Society to the American Medical Association."

Article VIII

Amend the article to read as follows:

"The Standing Committees of the Society shall be (1) Scientific Exhibits, (2) Legislative, (3) Membership, (4) Ethics, (5) Judicial and Constitution, (6) Public Relations, (7) Grievance, (8) Annual Scientific Program, (9) Finance and Budget, (10) Liaison to Blue Shield of Virginia (11) Pharmacy. There shall be an Editorial Board for the official publication of the Society, which board shall be considered as one of the standing committees of the Society."

(The committee organization of the Society is being restructured in the amendments to the By-Laws which follow. This change conforms with the by-law amendments.)

AMENDMENTS TO THE BY-LAWS

Article I, Section 1

After the word "courtesy," in the first sentence insert

"student active,"

At the end of the first paragraph, add

"Student active membership is based upon membership in a component student society."

At the end of the second paragraph add

"Members in good standing in component student societies are eligible for student active membership in the Society. Student active membership terminates when the member graduates or his enrollment in the medical school terminates."

(These amendments and the amendments to Article I, Section 3, Article II, Section 3, Article III, Sections 1, 2, 5, 6, 8, 9, and 10, Article V, Sections 2 and 10, Article VIII, Section 5 and Article IX, Sections 6 and 9 will enable the second, third, and fourth year medical students to form component student societies through which they may enjoy active membership in the medical society with the right to attend meetings, vote, and serve on special committees while in medical school. Since membership on standing committees would extend beyond the normal term of student membership in the society, students are not made eligible to serve on these committees. Student members will not be required to pay dues to the society but there is no limitation upon the right of either component societies or component student societies to require dues.

Article I, Section 3

Amend the section to read as follows:

"The privilege of holding office, and serving on standing committees, is limited to active and honorary active membership, who, together with student active members, and no others, shall have the right to vote. In all other respects the status of the active, associate, courtesy, student active, honorary active and honorary associate members is the same."

Article II, Section 3

Change the first sentence to read as follows:

"Student active, honorary active, and honorary associate members shall be exempted from the payment of annual dues, and the President, in his discretion, may extend this exemption to other deserving members."

Article III, Section 1

Change section to read as follows:

"The component societies and component student socities shall be those holding charters from the Society."

Article III, Section 2

At the end of the section add the following paragraph:

"There may be not more than one component student society at each medical school approved by the American Medical Association, such component student society to be composed of second, third and fourth year students in good standing. When a component student society, consisting of at least 15% of the eligible students qualifies, it may obtain a charter upon application to the Executive Secretary-Treasurer, which charter shall be signed by the President and the Executive Secretary-Treasurer."

Article III, Section 5

Add a second paragraph to the section as follows:

"A component student society shall drop from its roll a member whose membership in the State Society has been lost on account of misconduct."

Article III, Section 6

Change the section to read as follows:

"A member expelled by a component society or by a component student society can appeal to the State Society through the Ethics Committee."

Article III, Section 8

After the words "Each component society" insert
"and each component student society"

Article III, Section 9

Rewrite the section to read as follows:

"The Secretary of each component society and of each component student society shall keep a roster of its members. Such roster shall include, for the component society, name, address, year of graduation, college, and date of State license, and, for the component student society, name, address, class or expected year of graduation, and college, and all such rosters shall include such other information as may be desired by the Society. Once a year, not later

than July 1st, the Secretary of each component society and of each component student society shall send a list of its members to the Executive Secretary-Treasurer of the State Society."

Article III, Section 10

After the words "The component societies" insert "and component student societies"

Article IV, Section 5

Before the words "Program Committee" insert "Annual Scientific"

(The amendments to this section and to Article VII, Sections 3, 6 and 12, and to Article IX and Sections 2, 3, 5, 6, 7, 8, 9, 10, 11 and 12 and the deletion of present Section 4 of, and the addition of new Section 12 to, Article IX, are for the purpose of reorganizing the Standing Committees and Special Committees of the Society into Sections so as to provide for greater participation by the membership of the Society in the Society's activities and for the improvement of the Society's work.)

Article V, Section 2

Change the last sentence of the first full paragraph of the section to read

"Delegates and alternates shall be active members or student active members of The Medical Society of Virginia."

Add a third new full paragraph at the end of the section as follows:

"Each component student society may elect annually to the membership in the House of Delegates two delegates and two alternates. If both of the two delegates accredited to a component student society are not present at the meeting of the state society, those members present from such component society shall, from members of that society present, elect or appoint one or two delegates as may be necessary to complete its quota. Student active members, their component student society, and the delegates from the component student society shall be considered members, societies, and delegates of the territorial area in which is located the medical school with which they are affiliated."

Article V, Section 10

After the words "component study society" insert

"or component student society"

Article VI, Section 2

Change the section to read as follows:

"Only active members and honorary active members, in good standing, are eligible to office."

(Section 3 of Article I indicates that honorary active members should be eligible for office, and this change is made necessary by reason of the creation of a new class of active membership—student active members.)

Article VII, Section 3

Change "Program Committee" to read "Committee on the Annual Scientific Program"

Article VII, Section 6

Change "Finance Committee" in the first sentence to read

"Finance and Budget Committee"

Article VII, Section 7

After the first sentence insert

"The President-elect shall make every effort to name all committees and appoint all committee members by September 1, but special committees may be named and members appointed at any time."

Article VII, Section 12

Change "Program Committee" to read

"Annual Scientific Program Committee"

in both places in the section.

Article VIII, Section 5

After the first sentence, insert a new sentence and change the remaining sentence of the section, so that the second and third sentences of the section will read

"The Council shall also be charged with the duty of organizing component student societies. The Council shall recommend to the House of Delegates the revocation of a charter of a component society or component student society when such component society or component student society flagrantly violates the rules of the Society."

Article IX—COMMITTEES AND SECTIONS

Change the title of the article and the first, second and third full paragraphs so that they will read

"A—STANDING COMMITTEES

"The Standing Committees of the Society shall consist of an Editorial Board for the official publication of the Society, and additional Committees as follows:

(1) Scientific Exhibits.
(2) Legislative.
(3) Membership.
(4) Ethics.
(5) Judicial and Constitution.
(6) Public Relations.
(7) Grievance.
(8) Annual Scientific Program.
(9) Finance and Budget.
(10) Liaison to Blue Shield of Virginia.
(11) Pharmacy.

"Each of these Committees with the exception of the Legislative, Public Relations, Grievance, Finance and Budget, and Liaison to Blue Shield of Virginia Committees shall consist of three members, whose term of office shall be three (3) years. Successors to the members who have first been appointed for one, two and three years shall be appointed for three years by the incoming President who shall also name the chairman of each Committee.

"The Legislative Committee shall consist of nine members, three to be appointed annually by the incoming President. The Liaison Committee to Blue Shield of Virginia shall consist of twelve (12) members. At each annual session the incoming President shall appoint members to fill vacancies in that committee in accordance with the by-law requirements of Blue Shield of Virginia."

Article IX, Section 2

Change the caption of the section and the name of the committee in the first sentence from "Scientific Exhibits and Clinics" to

"Scientific Exhibits".

Article IX, Section 3

Change the caption of the section from "Legislation" to

"Legislative",

and change the name of the committee as set forth in the section from "The Committee on Legislation" to

"The Legislative Committee".

Article IX, Section 4

Delete the caption to the section and strike out the entire section.

Article IX, Section 5

Renumber this as "Section 4."

Article IX, Section 6

In the first paragraph, after the word "component", in both places insert the words "or component student". and renumber this Section as "Section 5."

Article IX, Section 7

Change the caption of this section and the name of the committees as set forth in the section from "Judicial" to

"Judicial and Constitution"

and renumber the section as "Section 6."

Article IX, Section 8

Renumber this as "Section 7."

Article IX, Section 9

Change the caption of this section from "Mediation" to to

"Grievance",

renumber the section as "Section 8", and change the name of the committee as used throughout the five paragraphs of the section from "Mediation" to

"Grievance".

In the second paragraph, after the word "component", in both places, insert the words "or component student".

Article IX, Section 10

Change the caption of this section from "Program" to

"Annual Scientific Program",

renumber the section as "Section 9", and change the name of the committee as set forth in the section from "The Program Committee" to

"The Annual Scientific Program Committee".

Article IX, Section 11

Change the caption of this section from "Finance" to

"Finance and Budget",

renumber the section as "Section 10", and change the name of the committee as set forth in the first sentence of the section from "The Committee on Finance" to

"The Committee on Finance and Budget".

Article IX, Section 12

Change the caption of this section from "Blue Shield Directors" to

"Liaison to Blue Shield of Virginia",

renumber the section as "Section 11", and change the section to read as follows:

"The Committee for Liaison to Blue Shield of Virginia shall be the Society's appointees to the Board of Directors of the Virginia Medical Service Association."

Article IX, Section 13

Renumber the Section as "Section 12".

B—SECTIONS AND COMMITTEES

Add a new clause at the end of Article IX as follows:

"B—SECTIONS AND COMMITTEES

"Standing committees and all other committees of the society shall be organized into six separate sections which shall be as follows:

"(a) The Administrative Affairs Section shall include the Executive Committee, the Editorial Board, and the standing committees on Membership, Ethics, Finance and Budget, and Judicial and Constitution, and shall include an Insurance Committee when such may be appointed.

"(b) The Communications Section shall include the Legislative, Public Relations, and Grievance Committees, which are standing committees and shall include a Committee on National Legislation when such may be appointed.

"(c) The Advisory and Liaison section shall include the Pharmacy Committee, and shall include a Committee Advisory to the Virginia Hospital Association, a Liaison Committee with Nurse Examiners and Organized Nursing, a Liaison Committee to the Virginia State Bar, a Committee Advisory to Women's Auxiliary, and a Committee on Medicine and Religion when such committees may be appointed.

"(d) The Medical Service Section shall include committees on Venereal Disease, Rehabilitation, Alcohol, Cancer, Conservation of Hearing, Conservation of Sight, Maternal Health, Child Health, Mental Health, Rural Health, and Industrial Health, when such committees may be appointed.

"(e) The Education Section shall include the Committees on Scientific Exhibits and Annual Scientific Program, and shall include a Medical Education Committee, a Committee on Heart, Cancer & Stroke (R.M.P.) and Committee on Comprehensive Health Plan, a Health Careers Committee, and a Peer Review Committee when such may be appointed.

"(f) The Section on Medical and Health Care Financing shall include the standing Committee for Liaison to Blue Shield of Virginia and shall also include a committee for Liaison to Roanoke Blue Shield and a Committee on Dependent's Medical Care, when such may be appointed.

"(1) Appointments of committees other than standing committees shall lie within the discretion of the President. When he appoints such committees he shall also name their chairmen.

"(2) The Chairmen of the committees which compose each section shall at the time of the annual meeting of the Society elect from their number a Section Chairman who shall be responsible for the operation of the committees within his section and for the making of necessary reports and shall himself report directly to the Council and the House of Delegates, or may report to them through the President as the co-ordinator of committees.

"(3) The President shall be the coordinator of all committees and as such may require reports from section chairmen and committee chairmen.

"(4) Component societies may suggest the names of members for appointment to committees, but no such suggestions shall be binding upon the President.

"(5) The President shall describe in writing the duties and responsibilities of each special committee appointed by him and this description shall be filed for record with the Executive Secretary-Treasurer. For this purpose, the President may adopt any committee description already on file."

TRANSITIONAL BY-LAWS PROVISIONS

At the end of the By-Laws insert the following provisions, which, being transitional in nature, shall not be printed when the Constitution and By-Laws have been amended and are published:

"Transitional By-Laws Provisions

"The proposed amendments form a new committee structure for the society, and, incident to such reorganization, abolish one standing committee and rename several standing committees. Incumbent members of the Scientific Exhibits and Clinics, Legislation, Judicial, Program, Finance, and Blue Shield Directors Committees shall continue to serve on the Scientific Exhibits, Legislative, Judicial and Constitution, Annual Scientific Program, Finance and Budget, and Liaison to Blue Shield of Virginia Committees, respectively, to the expiration of the terms for which appointed, although the names of the committees shall have been changed."

JOHN A. MARTIN, M.D., *Chairman*
RICHARD H. FISHER, M.D.
CHARLES W. WHITMORE, M.D.

Public Relations

Events of recent years have made one fact unmistakably clear—there is an increasing need for more effective communication between the medical profession and the public and between physicians, law makers and members of the news media. This is just another way of saying that we need effective public relations as never before.

The Medical Society of Virginia is aware of this need and is right now in the process of doing something about it. During the past twelve months a Special Committee Studying the Future Mission of the Society spent a great amount of time on the problem and we would like to quote a portion of its report to Council. The Committee stated that "Physicians individually and collectively are guilty of a communications failure. We failed miserably during the Medicare fight. The average man in the street was told by our detractors that we were not interested in taking care of old people and that we were greedy money-grubbers. The people believed these fantasies. Things have not changed much since Medicare was enacted, unless they have worsened.

"Currently the Hart subcommittee, investigating the high cost of hospitalization, has blamed the physicians for these soaring costs and try as we may, the true major reason for the increasing costs is ignored, i.e., wage increases demanded by oganized labor. American medicine, time and time again, told Congress and the American people that the proposed appropriation for Title XVIII was woefully inadequate, but for some reason we

were unable to effectively communicate this simple message. Today our prediction has come to fruition and the cost of Part B has been increased from $4.80 per month to $5.20 per month and guess who is being blamed? Yes, the physicians. Senator Russell Long's Senate Finance Committee recently released a preliminary report on Medicare and Medicaid. Their report put the blame squarely on the physicians for the extraordinary cost of these programs. Yet a careful analysis of the report indicates that only 1.1 per cent of the total federal expenditures for the program in fiscal 1969 can be attributed to increased physicians' fees. We have failed to communicate this message to the people.

"We have failed to communicate in other areas:

"—Failure to communicate to patients understandingly and understandably about their illnesses.

"—Failure to communicate with patients regarding medical fees and costs.

"—Failure to communicate with patients on a personal level, leading to complaints that doctors are cold and indifferent to their problems.

"—Failure to communicate on our tangibly-positive assets and programs, i.e., efforts to solve the manpower crisis, peer review, advances in medicine, physician participation in civic activities, drug abuse, mental health programs, etc.

"These are but a few of the things that must be corrected if we are to stem the tide for government or closed-panel medicine. The realities of communicable techniques are not always palatable to scientifically-oriented men, but we must stand up for the system we know works best. We must promote our point of view in the name of organized medicine, not selfishly, but on behalf of the public interest. This can be accomplished within the "Guidelines for Physicians with the Communications Media" as set forth by the Judicial Council of the AMA. . ."

That statement certainly spotlights our communications shortcomings and nails down those areas in which we must become more active and effective. The Committee Studying the Future Mission of the Society feels that we need sufficient staff to administer a truly top flight PR program—a program which will tell the true story of medicine to Virginians and make it possible to successfully resist the massive onslaught of those who seem determined to reduce the nation to second rate status where medicine is concerned.

During the past twelve months your Public Relations Committee again presented special programs for senior medical students at the Medical College of Virginia and University of Virginia School of Medicine. Both groups had the privilege of hearing Dr. William Grossmann, President of The Medical Society of Virginia, discuss the future and the necessity for involvement.

The newly appointed Subcommittee on the Medical Aspects of Sports presented a conference on the subject in cooperation with the Virginia High School League. The conference was held in Charlottesville and featured a Saturday night get-together and an extremely interesting Sunday program. Special guest participants were Early Wynn, ex-Major League pitching great and Dr. Fred Allman, Jr., Team Physician of Georgia Tech.

4-H Club Health Award winners were honored during a special ceremony in Blacksburg attended by Dr. Robert Cassidy, Chairman of the Committee on Rural Health. Participation by the Committee in this particular 4-H Program has long been one of our very best PR projects.

It is good to report that the AMA Institute has been resumed—the 1970 version being scheduled for August 6-7 in Chicago.

The Committee continued to work with the Virginia Association of Medical Assistants and both your Chairman and Executive Secretary are serving in an advisory capacity on long range projects.

It has come to the Committee's attention that a Richmond public relations firm is in the process of developing a combination public relations—continuing education project with exciting potential. It features self-contained projection units which can be used in the physician's waiting room and require no supervision. We hope to have more information for you in the not too distant future.

It is easy to talk about public relations and communications but, in the final analysis, it all comes down to what you as an individual will do. As far as your patients are concerned, you are the medical profession. What a wonderful opportunity you have to develop and maintain good communications with an important segment of the American public—your patients.

John Wyatt Davis, Jr., M.D., *Chairman*

Ethics

The past year has been a fairly quiet one for your Committee, even though a total of seven requests for assistance was received. One of these was referred to the appropriate local ethics committee and the others were handled in a routine manner without difficulty.

The inquiries received by the Committee were concerned with such matters as newspaper publicity, physician-lawyer cooperation, physicians' records, open house functions, rebates and discounts, proper use of medical assistants, etc.

At least two of the matters brought to the Committee's attention bore out the fact that any time a physician is in doubt concerning a proper course of action, he should immediately consult his local medical society. This is especially true in matters involving the news media, special functions and announcements, etc. It would do well to remember that ethics do vary from state to state —and often from section to section within a state. By all means play it safe and consult your local ethics committee before going too far. If in doubt concerning just who to contact, direct your inquiry to the Executive Secretary of The Medical Society of Virginia. He will make sure that it is placed in proper hands.

Hugh G. Stokes, M.D.
K. K. Wallace, M.D.
W. T. Thompson, Jr., M.D., *Chairman*

Air Pollution

The Air Pollution Committee held one meeting during the past year on February 7, 1970, in the Society headquarters in Richmond. Mr. Richard W. Arey, Executive

Secretary of the State Air Pollution Control Board, was present by invitation in order to bring the committee members up to date on the activities of his Board and the status of air pollution control in Virginia. The Air Pollution Control Board has set forth standards as regards sulfur oxides and particulate matter. These two pollutants have been the subject of initial attempts at control in all states which have set forth standards. The reason for this is that excess amounts of them in the atmosphere have been associated with all of the major historical air pollution catastrophes.

After considerable discussion it was the opinion of the committee that the standards set forth by the Air Pollution Control Board regarding these two pollutants were satisfactory from the standpoint of the health of the people. Virginia is fortunate in that the coal which is mined within our borders has a comparatively small amount of sulfur in comparison with other coal in the United States.

The committee also requested that the Appropriations Committee of the General Assembly make additional funds available to the Air Pollution Control Board so that more testing equipment could be obtained and used and more personnel employed.

In the near future it is hoped that standards for nitrogen oxide, hydrocarbons and carbon monoxide will be brought forth.

W. S. Hotchkiss, M.D., *Chairman*

Blue Shield Directors

During the past year, as requested by your Insurance Committee, a Group Membership has been created by Blue Cross-Blue Shield of Virginia for The Medical Society of Virginia. Major Medical coverage is available to this group.

Both participating physicians and subscribers are at an all time high.

Blue Shield of Virginia remains in excellent financial condition. As this is written steps are being taken which the Board of Directors, (including this committee), feels will lower administrative costs considerably for Blue Shield of Virginia.

F. J. Wright, Jr., M.D., *Chairman*

Mental Health

The Committee on Mental Health met on April 8, 1970 and July 8, 1970.

During both meetings of the Committee, there was considerable discussion of an experiment being conducted by the State Board of Welfare and Institutions at the Hanover and Beaumont Training Schools for Boys. According to a newspaper item "Essentially, the experiment entails the use of large doses of Vitamin B_3 (Niacin) and Vitamin C (ascorbic acid). It will involve 150 boys in the Hanover Beaumont Schools operated by the Department of Welfare and Institutions. The experiment is aimed at reducing schizophrenic and other abnormal behavior in juvenile delinquents."

The proposed experiment is of concern since Niacin and Ascorbic Acid have not been approved by either the Federal Drug Administration or reliable researchers such as the National Institute of Mental Health as satisfactory therapeutic agents either for schizophrenia or behavior disorders. During the second meeting of the Committee, a motion was adopted calling for a representative of the Mental Health Committee, a representative of the Neuropsychiatric Society of Virginia and the Board of Medical Examiners for the State of Virginia to request a joint meeting with the Director of the Virginia State Board of Welfare and Institutions to review this entire project. (At this writing, considerable correspondence has taken place between the Secretary of the State Board of Medical Examiners, the Chairman of Legal Aspects of Psychiatry of the Neuropsychiatric Society of Virginia, and the Chairman of the Mental Health Committee.

Dr. Hiram Davis, Commissioner of the Department of Mental Hygiene & Hospitals, was present at the first meeting of the Mental Health Committee. Dr. Davis discussed at length the annual budget for the Department of Mental Hygiene & Hospitals. He stated that the annual budget beginning July 1, 1970, will be approximately fifty-two million dollars.

Dr. Davis and Dr. Buxton, a member of the Mental Health Committee, reported to the Committee concerning legislation recently enacted by the 1970 General Assembly that had to do with the amendments to Chapter 2, Title 37.1 of the Code of Virginia. The amendments were primarily concerned with admission of psychiatric patients to private and public mental hospitals. Dr. Buxton reported that the amendments, as endorsed by The Medical Society of Virginia, were adopted by the General Assembly.

It was the consensus of the Committee that there should be a continuing review of Title 37 of the Code carried on jointly by a committee representing the Neuropsychiatric Society of Virginia, The Department of Mental Hygiene & Hospitals, and the Mental Health Committee in order to make recommendations for any changes desirable during the next session of the Virginia General Assembly.

The Chairman gave a report of the Committee concerning the 16th Annual American Medical Association Conference of State Mental Health Representatives, which he attended in Chicago, on March 13 and 14, 1970. The topic of the Conference was "Mental Health for the Poor". The Committee was particularly interested in a questionnaire which had been circulated in connection with the Conference. The questionnaire had to do with Mental Health Services under Medicare and Medicaid and revealed a wide difference of opinion concerning these services throughout the nation. There was a general agreement, however, that there exists a serious manpower problem in the mental health field.

On April 8, 1970, a Seminar entitled "Psychiatry for the General Practitioner" sponsored jointly by The Mental Health Committee of The Medical Society of Virginia, The Virginia Academy of General Practice and The Neuropsychiatric Society of Virginia was held at Westbrook Psychiatric Hospital. There were approximately 80 general practitioners and their wives present. The moderator of the 1970 Seminar was Dr. John R. Saunders, Chairman of the Mental Health Committee. Dr. James L. Mathis, Associate Professor of Psychiatry at Rutgers University, and now Chairman of the Department of Psychiatry at the Medical College of Virginia, spoke on "Sexual Counseling for the Patient with Im-

potency or Frigidity". Dr. William J. Hagood, Past-President of the Virginia Academy of General Practitioners, spoke on "What the General Practitioner Expects from the Psychiatrist". Dr. Herbert C. Modlin, Director of the Department of Preventive Psychiatry at the Menninger Foundation spoke on "Cues and Clues to Suicidal Behavior".

Mr. Walter Laude, Chairman of the Mental Health Committee of the Woman's Auxiliary of The Medical Society of Virginia, was an invited guest at the Committee's second meeting. Mrs. Laude reviewed the work of her Committee, which included the sponsoring of workshops over the State of Virginia, stressing the behavioral problems of adolescents, remedial reading for mentally handicapped groups, and group therapy in some areas of the State. The Mental Health Committee recommended the continuation of the drug abuse program by Mrs. Laude's Committee.

Insurance coverage for Psychiatric Illness was a topic of discussion by the Committee. It was the feeling of the Committee that it should be mandatory for all health insurance policies written in Virginia to include coverage for psychiatric illness. However, it was the consensus of the Committee that this might not be possible at this time. In lieu of this, a motion was unanimously adopted by the Committee to recommend through the proper channels that legislation be enacted making it mandatory for insurance companies which do not provide coverage for psychiatric illness to so state this in bold print in their policies.

The Chairman wishes to express to the remainder of this Committee and to Mr. Robert I. Howard, Executive Secretary of The Medical Society of Virginia, his appreciation for their cooperation and assistance in the formulation of this report.

John R. Saunders, M.D., *Chairman*
W. D. Buxton, M.D.
Emory F. Hodges, Jr., M.D.
R. Terrell Wingfield, M.D.
Robert H. Thrasher, M.D.
William W. Martin, Jr., M.D.
Asad Masri, M.D.

Advisory to Woman's Auxiliary

The Woman's Auxiliary to The Medical Society of Virginia continues to serve the Medical Society with programs geared to further medicine in the State.

It has not been necessary for the Advisory Committee to meet this year; however, we have given our advice and opinions when consulted. One particular program concerning Mental Health won our wholehearted approval when it was submitted for our study and recommendation.

Robert D. Keeling, M.D., *Chairman*
F. Ashton Carmines, M.D.
James M. Moss, M.D.
Carl E. Starke, M.D.
Joseph M. Straughan, M.D.

Alcoholism

We have a statue of liberty on the east coast. It has been suggested that, as a balance, we need a statue of responsibility on our west coast. With every privilege and liberty, there is a corresponding duty and responsibility.

Excessive permissiveness without regard for consequences seems to have been highly contributory to the drug abuse so alarming today. This, in turn, is an outgrowth of our permissive attitude toward alcohol during the last three or four decades. Our social pressures for drinking have been so strong that many people, striving for social position, have regarded the cocktail party as the *sine qua non* for climbing the social ladder. Our tolerance of drunken behavior has been nauseating in retrospect. At present, our society seems to encourage alcoholism, not just tolerate it. Drinking has been made to appear the symbol of sophistication, the essential lubricant for all social functions. There is a tendency to snicker at those who do not, or, for some reason, cannot drink. People are quick to laugh at tales of drunken exploits—even when they involve risking the lives of others by drinking to the point of negation of responsibility.

We have failed to co-operate as well as we should with our law enforcement officers. We have ridiculed or sneered at Alcoholics Anonymous, which is the best organization known for the rehabilitation of alcoholics. The medical profession could, by recommendation and referral, greatly increase the effectiveness of AA. Instead, most physicians lend no support to it. They have never attended an AA meeting, and have no concept of how it works. In fact, a significant number of our profession needs to attend AA meetings because of being problem drinkers themselves.

We have evolved into a drug-oriented society, a permissive society. Regardless of cause and effect (including the relative order of these), each tends to augment the other. Serious-minded people can only wonder where it all may lead. Surely we are approaching a point of saturation, and may soon expect the inevitable backlash ("backwash" is probably a more appropriate term).

Judging by our behavior, we had thought our capacity illimitable to absorb all forms of protest without serious disturbance of social order. The conservative thinker is amazed, yea, aghast, that it should come to this (the present state of things) in his lifetime, for never in his wildest dreams did he expect such as has already come to pass.

Now the anxiety of our western culture is threatened by the passivity of the east. Our soldiers are returning from Indo-China introduced to a rather potent type of marihuana.

Can the besotted behavior of our elbow-bending culture be blamed for causing a calloused attitude toward even more subtle or more potent means of temporary oblivion, of escape from reality? Regardless of cause, we are in this mire of drug "pollution" and we are headed toward the quicksands in which we can soon hopelessly and irretrievably drowned or smothered.

Our average citizen's emotional immaturity in his approach to alcohol and other drugs seems to be carrying us farther and farther down the road to drug dependence.

Can we awaken in time? Please try!

William S. Sloan, M.D., *Chairman*
James Asa Shield, M.D.
Ebbe C. Hoff, M.D.
William F. Gibbs, M.D.
Weir M. Tucker, M.D.

Insurance Review

A total of sixty-two cases were referred to your Committee for review during the past ten months—a new record. While most of these cases were sent us by the commercial carriers, a goodly number were received from the State Department of Vocational Rehabilitation and the State Medicare Administrator.

As you know, your Committee was established some time ago at the request of the Health Insurance Council for the purpose of reviewing claims which posed special problems and recommending their proper disposition. While most of the referrals have to do with fees, quite a few involve questions of utilization. The number of cases referred to the Committee continues to increase—a matter of some concern. From our experience we have found that many could have been avoided if physicians concerned had provided more detailed information and documentation. A bit more time at the very beginning will many times save much inconvenience and insure more prompt payment.

The Medical Society of Virginia is hopeful that its component societies will, from this point on, be able to handle most of the Medicare cases which require review. These cases often contain factors which require local consideration if they are to be resolved satisfactorily.

Your Committee appreciates the understanding and cooperation of those physicians whose claims have been subjected to review. They make so much easier what could sometimes be a most difficult task.

Beverley B. Clary, M.D., *Chairman*

Grievance

The Grievance Committee had a case referred to it for the first time in a number of years this past year. This consisted of a complaint of a patient and her husband against an orthopedic surgeon in the Arlington-Alexandria area. This was a somewhat touchy and difficult situation that was referred to the Committee by the Virginia State Board of Medical Examiners. The Committee at its meetings heard the physician's story in great detail and examined his records. The patient's husband was offered an opportunity to appear before the Committee but did not do so. However, he had voluminous reports for the Committee to study. Several experts in the field in this State were consulted concerning this problem and there were many letters and telephone calls between the various Committee members.

A report to the husband of the patient was sent to him by registered mail and as far as the Grievance Committee is concerned the matter is closed.

McLemore Birdsong, M.D., *Chairman*
Alexander McCausland, M.D.
K. K. Wallace, M.D.
Thomas Murrell, Jr., M.D.
Ashton Carmines, M.D.

Liaison to Virginia Podiatry Society

This committee met with Dr. Milton Cummings, Dr. Theodore Levy and Dr. William Thornton on March 25, 1970, to discuss items presented by the above men. Dr. William Grossmann was present at this meeting. The above representatives of the Virginia Podiatry Society presented four items for discussion.

1. They requested that a committee from The Medical Society of Virginia be appointed on a permanent basis to meet with representatives of the Virginia Podiatry Society to discuss items of mutual interest. It was the recommendation of this committee that this was a matter for council to decide and did not make any specific recommendations in this respect.

2. Podiatrists wish to be accepted as a member of the "medical team". It was the opinion of two members of this committee, Drs. Conquest and Nemuth, that podiatrists should be considered as part of the total medical team. Chairman of this committee, Dr. Carpenter, did not share this view and felt that a motivation for the podiatrists to become members of the medical team was more for participation in Federal Health Programs than for any other reason.

3. Podiatrists wish to have one of their representatives appointed as a member to the State Health Department. It was the opinion of this committee that this was purely a matter for the State Health Department to decide and was of no concern to The Medical Society of Virginia. It is the further opinion of this committee that a podiatry representative would offer no particular benefit to the State Health Department in their functions.

4. Podiatrists request that doctors and The Medical Society of Virginia aid them in obtaining hospital privileges. It was the opinion of this committee that this was entirely a matter between the individual hospital concerned and the individual podiatrist concerned and was not a matter of concern to The Medical Society of Virginia.

As a minority report filed with Dr. Grossmann, the chairman of this committee felt that the apparent stimulated interest of the podiatrists to participate in functions of The Medical Society of Virginia was motivated more for desire to participate in Federal Health Programs, namely Medicare and Medicaid, rather than for other reasons.

H. Fairfax Conquest, M.D.
Harold I. Nemuth, M.D.
Earnest B. Carpenter, M.D., *Chairman*

Liaison to State Bar

The Liaison Committee to the State Bar has been quite active during the past year and, in conjunction with the Bar representatives, has heard a total of 34 cases before the Joint Medico-Legal Screening Panel. Experience with the Panel since its development in 1962 continues to show that approximately 65% of the decisions of the Panel favor the physician, whereas approximately 35% favor the patient plaintiff. To date, there has been no instance of litigation in cases where the decision of the Panel was adverse to the patient.

It is somewhat disturbing that the Panel is not used more widely by the doctors and the insurance companies representing them, and many instances of unilateral hearings take place.

The chairman of your committee addressed the joint meeting of the Newport News Medical Society and the Newport News Bar Association, along with the chairman of the corresponding Bar Committee. Your chairman also presented the Virginia plan for screening medical malpractice cases at an Alabama Chapter meeting of the American College of Surgeons.

As malpractice rates have increased, interest in the Joint Medico-Legal Screening Panel has also increased. It is our hope in the future that the Panel will be more widely used by defense attorneys and insurance companies representing members of The Medical Society of Virginia.

CARRINGTON WILLIAMS, JR., M.D., *Chairman*

Nursing

The year 1969-1970 has been one of clarification of misunderstandings and enlightenment of avenues to pursue whereby the medical and nursing professions may establish better communication, understand each others problems, and, hopefully, establish the mechanics with which all health providing agencies may attain a common goal of "Better Health Care for Every One" by concerted united efforts.

Seven Regional Conferences on Nursing were held during the months of March and April of 1970. Your chairman was privileged to attend one of these conferences at Catholic University in Washington, D. C. The theme of this conference was a discussion of Summary Report and Recommendations of the National Commission for the Study of Nursing and Nursing Education. Three categories of activity were emphasized:

(1) More research for nurses needed.

(2) Improvement in opportunities for education of nurses.

(3) Improvement of nursing careers and utilization of nursing skill. Some of the questions to be answered are:

(1) In the United States there are 1,200,000 nurses—only 900,000 licensed, 445,000 employed full time, and 613,000 unemployed. Why?

(2) The percentage of high school graduates entering the nursing profession was 7%, today it is approximately 4%. Why?

(3) Staff nurse employment turn-over is 70%. Why?

(4) Tangible economical status is not conducive to nursing profession. Why?

(5) The drop-out rate in nursing schools is one out of three. Why?

(6) The nurse is a professional person; should she not be respected as one?

(7) Problems and Patterns of Nursing Education are not placed in the main stream of education. Why?

It is the responsibility of all health providing agencies to unite themselves to find answers to these and many other questions which are detrimental to the nursing profession, and causing the apparent "shortage of nursing personnel".

On May 22, your Committee on Nursing met at The Medical Society of Virginia headquarters with the following representation:

The Medical Society of Virginia:

Dr. William Grossmann, President
Dr. W. Nash Thompson, Chairman
Dr. John P. Lynch
Dr. James M. Moss
Dr. Charles N. Townes
Dr. Bradford S. Bennett

Virginia State Board of Nursing:

Mrs. Helen W. Wiesmann, President
Miss Mabel Montgomery, Secretary

Virginia Nurses' Association:

Miss Dorsye Russell, President
Mrs. Barbara Walker, Executive Director

Virginia League for Nursing:

Mrs. Betty N. Norris, President

Dr. Doris B. Yingling, Dean, School of Nursing, Medical College of Virginia.

The theme of this conference was "Nursing in Virginia", what is being done, what should be done, and what can be done.

Dr. Grossmann, in his opening remarks, pledged the support of The Medical Society of Virginia, in assisting the nursing profession in any and every way possible in providing more nurses and more efficient nurses.

It was agreed that more personnel must be trained and licensed in the Baccalaureate, Associate Degree, and Diploma schools, as well as more aides, if the demand is to be met. Improved recruitment methods must be provided, that no vacancies remain in any school of nursing. Nurse representation should be on all health planning programs. Working conditions and salaries must compete favorably with industry, and be commensurate with all other professional categories.

It was pointed out that in the educational program there is definitely no "career ladder". An Associate Degree in Nursing is not the first two years of a Baccalaureate Degree; neither is a Diploma in Nursing a stepping stone to a Bachelor Degree. A few courses taken in a Diploma and Associate Degree program may receive credit toward a Baccalaureate Degree, but full credit is not attained.

Dr. Yingling informed the conference that an internship for Degree and Associate Degree graduates has been established at the Medical College of Virginia, which is expected to familiarize the graduate in all facets of the nursing profession as well as any specialty in which they may be interested.

Continuing education has become a must in the nursing profession. Plans are now being made for this project, with Miss Barbara Walker, project director. There will be five regional coordinators. The program will be implemented through the cooperation of physicians, hospitals, nursing homes, etc. Hopefully some interest will be stimulated and revived among nurses who are inactive at the present time.

It was pointed out that much of the misunderstanding between physicians and nurses is a lack of communication. While conferences on the State level—such as this meeting—are quite beneficial, the real need for better understanding and cooperation is in the localities themselves.

The following motion was made by Dr. Bennett: "That a planning committee for such meetings be appointed. The committee would consist of representatives of The Medical Society of Virginia, Virginia Nurse's Association, Virginia Hospital Association, Virgina League of Nurses, and other appropriate bodies, and would recommend component districts in which meetings could be held. It would also assist in making the necessary arrangements." This motion was seconded and passed, and your committee recommends the ratification of this motion by The Medical Society of Virginia.

Miss Mabel Montgomery, Secretary of Virginia State Board of Nurses, presented her usual fine report from the State Board. 14,988 registered nurses are practicing in Virginia, an increase of 742 since the last report. 6,431 licensed practical nurses, an increase of 442 since last year. There has been added five new LPN schools, making the total in Virginia of 50. Enrollment in schools, Dec. 1969: Diploma schools—1,444; Associate Degree programs—377; Baccalaureate Degree program—900.

We are most grateful to Miss Montgomery for her splendid presentation and the State Board of Nurses for their continued cooperation and efforts to supply qualified nursing personnel.

The State legislators of 1970 enacted a new Nurses Practice Act which has upgraded the standards of the nursing profession and placed it on an equal basis with other professions in the health field.

The medical profession offers its assistance in every way possible in advancing nursing education and elevating the profession of nursing to its proper perspective.

Carl A. Stark, M.D.
Bradford S. Bennett, M.D.
James M. Moss, M.D.
John P. Lynch, M.D.
Charles N. Townes, M.D.
Daniel N. Mohler, M.D.
W. N. Thompson, M.D., *Chairman*

Venereal Disease Control

There has been a steady decline in cases of syphilis in Virginia during the past few years. This progress in control of syphilis is attributable to the increasing cooperation between private physicians and health department contact investigators in seeking out and treating contacts of active cases. However, syphilis remains the fourth most prevalent infectious disease reported to the State and local health departments. In several areas around the country the incidence of syphilis is rising again. Therefore, your committee urges continued cooperation between physicians and health department personnel to insure continual decline of syphilis in Virginia.

Unfortunately, the incidence of gonorrhea continues to climb. This year it replaced measles as the most prevalent infectious disease reported to the health departments. It may be said that we are presently facing an epidemic of gonorrhea in Virginia, which is part of a nationwide epidemic. In most communities there are insufficient health department personnel to perform contact investigation on cases of gonorrhea. It is recommended that physicians treating gonorrhea urge patients to have their contacts report to either their physician or to the health department early for treatment, and that more utilization of routine cultures on females be carried out particularly in potentially high incidence groups such as in family planning clinics, obstetrical and gynecologic clinics, venereal disease clinics, etc.

William H. Kaufman, M.D.
Harry Pariser, M.D.
W. R. Southward, Jr., M.D.
E. Randolph Trice, M.D., *Chairman*

Rehabilitation

1. During the year, your committee, which also serves as the Advisory Committee to the Department of Vocational Rehabilitation, through the cooperation of the councilors of The Medical Society of Virginia, has been active in helping the Department of Vocational Rehabilitation procure medical consultants for the several Rehabilitation offices.
2. The Committee has been helpful in assisting the Disability Determination Section of the Department of Vocational Rehabilitation to arrange the lung function studies in connection with the meeting of the requirements of the recently enacted black lung legislation.
3. The Committee has been advising the Department of Vocational Rehabilitation in the matter of working out an agreement for services with the University of Virginia Hospital and the Medical College of Virginia Hospital.

Joseph R. Blalock, M.D.
Jose D. Coll, M.D.
Robert Faulconer, M.D.
G. S. Fitz-Hugh, M.D.
Hunter S. Jackson, M.D.
Fred M. Jacobs, M.D.
Joseph T. Kaye, M.D.
Frank C. McCue, III, M.D.
J. Treacy O'Hanlan, M.D.
Reno R. Porter, M.D.
Carney C. Pearce, Jr., M.D.
William Orr, M.D.
William D. Rusher, M.D.
James L. Thomson, M.D.
W. W. Walton, M.D.
David K. Webster, M.D.
Alexander McCausland, M.D., *Chairman*

Insurance

Your Committee met twice during the past year and a third session has been scheduled during the Annual Meeting. The overall insurance program of the Society is in sound condition and gives every indication of adequately serving the needs of the membership.

Although professional liability continues to be a source of great concern over the Nation, it is encouraging to report that Virginia has thus far escaped many of the problems so prevalent elsewhere. As you might expect, however, we have encountered an increase in the number of claims—potential and otherwise—and our experience is being watched very carefully.

At the present time, 95% of the membership is participating in our professional liability program—an all time high. This unusually high rate of participation is undoubtedly attributable to the fact that many of the major writers of professional liability insurance are gradually easing out of the market. This is another reason why your Committee intends to exercise the closest possible supervision over our program.

The program's experience over the last two years has made it necessary to file for an across-the-board premium increase. The increase, although comparatively small, will keep the program operating on a sound actuarial basis and the rates will remain considerably below those of the National Bureau.

Your Committee takes this opportunity to stress the importance of obtaining professional, premises and personal liability coverage from the same carrier. If the various types of liability are purchased from several carriers, it poses quite a problem when responsibility for coverage must be established.

Most companies writing professional liability coverage structure their premium rates under five major categories. It is not always easy to assign a physician to the proper category and a new and more effective application form will soon be used in connection with the Society's program. The form should enable the carrier to more easily determine proper classification.

The members' retirement plan has only recently been amended to allow participants to elect to have contributions made on their behalf invested in mutual fund shares as well as in the group annuities currently available. Many of our members will undoubtedly find this option most attractive.

The other programs sponsored by the Society are all doing well and require no special mention at this time. The Blue Cross-Blue Shield Plan is considered the best available anywhere and has been unusually well received. Our other programs offer disability, life, professional overhead, major hospital and accidental death coverage.

Your Committee would like to take this opportunity of again presenting to the Society a proposal to make available to employed physicians a tax-sheltered annuity program. The Internal Revenue Code provides that employees of certain nonprofit institutions, such as hospitals, may have up to one-sixth of their pay set aside for retirement. This money will not be included in their income for Federal income tax purposes. Any investment income earned on these funds is not reported as current taxable income.

Although a resolution approving such a program was brought to the attention of the Society last year, a misunderstanding prevented its acceptance. Consequently, your Committee would like to recommend that the following resolution be reconsidered:

WHEREAS, The Medical Society of Virginia deems it advisable to establish a program of retirement benefits in which the members of this Society who are employed by organizations which come within the scope of Section 501(c) (3) of the Internal Revenue Code may participate, now therefore be it

RESOLVED, that the tax-deferred annuity program as set forth in the submission of Suter Associates, Inc., to this Society on behalf of the Prudential Insurance Company is hereby adopted; be it further

RESOLVED, that the Executive Secretary is hereby authorized to take such actions as are necessary and proper to the formal establishment of said retirement program; be it also

RESOLVED, that Suter Associates, Inc., is hereby designated to perform the administrative and promotional services necessary under said retirement program.

As always, your Committee is interested in hearing from the membership concerning any thoughts or suggestions it might have about our programs. Such programs represent tangible benefits of membership and we want them to be the very best.

A. L. HERRING, JR., M.D., *Chairman*
C. W. CARTWRIGHT, M.D.
ALVIN E. CONNER, M.D.
JOHN W. GIESEN, M.D.
MICHAEL A. PUZAK, M.D.
DAVID V. STRIDER, M.D.

Medical Education

The Council of The Medical Society of Virginia, during its meeting of May 25, 1969, directed "that The Medical Society of Virginia give careful consideration to formulation of a plan of continuing education for its members as a highly desirable credential for membership and further study ways and means to assure satisfactory continuing education of the profession as a whole."

In response to this directive your Committee is currently making a study of ways and means to best accomplish these objectives in a manner that would least disrupt the practices of the membership.

The Medical Education Committee plans to have representation at the Second National Conference of State Medical Association Representatives on Continuing Medical Education to be held in Chicago in October. This conference will be followed by a meeting of the Medical Education Committee to firm up recommendations for better delivery of continuing education to the membership of The Medical Society of Virginia.

E. L. ALEXANDER, JR., M.D.
J. POWELL ANDERSON, M.D.
GEORGE J. CARROLL, M.D.
ROBERT L. CASSIDY, M.D.
CHARLES E. DAVIS, JR., M.D.
JOHN C. HORTENSTINE, M.D.
HANNIBAL E. HOWELL, M.D.
F. H. MCGOVERN, M.D.
JAMES M. MOSS, M.D.
THOMAS W. MURRELL, JR., M.D.
M. PINSON NEAL, M.D.
ALEXANDER MCCAUSLAND, M.D., *Chairman*

Heart, Cancer, Stroke

The Heart, Cancer and Stroke Committee (Regional Medical Program Committee) has continued to be active in 1970. The Regional Medical Program is being influenced at the national level by a number of factors which will ultimately affect the Virginia Regional Medical Program itself. These include President Nixon's attempt to overcome inflation by reductions in Federal expenditures, new administrative policies relative to health and welfare, and Congressional forces influencing current and future legislation. Your committee went on record this year in favor of maintaining the Regional Medical Program concept as it is written in the original bill, namely a program separate and apart from other Federally-sponsored programs in the health care field, but expressed a willingness to cooperate with other programs such as Comprehensive Health Planning, Medicare, Medicaide and the like. The Regional Medical Program concept of volunteer participation has received the full endorsement of many physicians throughout the state and it is felt by your committee that this degree of cooperation from physicians could be best maintained by a separate program for RMP. The proposed Yarborough Bill, endorsed by A.M.A. and others, recommends maintaining RMP intact without fusion with other efforts in health legislature. The sentiment of your committee was conveyed to Senator Yarborough.

The year 1970 is a period of great change in RMP modes and management. No longer are individual projects devised and approved by Washington. Each region is now encouraged to develop, formulate and administer broad programs encompassing the needs of the entire region under the leadership and responsibility of the Regional Advisory Group. Monies are to be allotted to a region on the basis of its overall program on an annual basis, with Federal review annually. As a result of these new directives, in the Fall of 1970 the Virginia RMP will be undergoing considerable structural reorganization and planning.

Since becoming operational in March 1970, the 10-month Federal allocation for all seven operational projects and core expenses will be $877,218.

FRANK ALTON WADE, M.D., *Chairman*

State Bar

Six cases of alleged malpractice have been heard thus far this year by the Joint Medico-Legal Screening Panel. Two others are in the planning stage as this report is written.

A review and analysis of the Panel's experience over the past several years leaves little room for doubt as to its value. Nearly forty cases have been heard and all physicians concerned have, for the most part, been spared the embarrassment and anxiety which are often associated with litigation. This does not mean, of course, that the Panel always finds in favor of the defendant. It does mean that when evidence indicates that malpractice did in all probability occur, every effort is normally made to settle the case in a manner acceptable to all.

Now that professional liability insurance is becoming more and more difficult to obtain, it is most important that we do everything possible to keep experience figures within reasonable limits. Premium rates in some states are soaring to unprecedented heights and it could happen here if we fail to take advantage of our opportunities. Consequently, we would strongly urge that physicians and their insurance carriers cooperate with the Panel by participating in the hearings whenever the occasion arises.

Two grievances are presently before your Committee—both involving physician-lawyer relationships. They will be considered in detail before the next Panel hearing.

Your Chairman, in company with the Chairman of the liaison committee representing the State Bar, attended a joint meeting of the Newport News Medical Society and Newport News Bar Association and presented a program having to do with the Panel and its operation. It was well received and pointed up the need of more effective communication between the Committee and the membership. A similar program has already been planned for the Fairfax County Medical Society in October. Should your society be interested in learning first-hand what the Joint Screening Panel is all about, just contact the Executive Secretary of The Medical Society of Virginia and he will handle all arrangements.

Our Virginia plan for screening medical malpractice cases has received considerable attention over the Nation. As a result of this interest, your Chairman spoke on the subject before the Alabama Chapter, American College of Surgeons, at Point Clear, Alabama.

Your Committee notes with regret that Mr. John Camblos, Charlottesville, is retiring as Chairman of the committee representing the State Bar. Mr. Camblos has made many contributions to the Panel over the past several years and it has been a privilege to work with him.

CARRINGTON WILLIAMS, JR., M.D., *Chairman*

Child Health

A meeting of the Committee on Child Health was held at Society Headquarters on June 4.

1. CHILD ABUSE:

It was recalled that when the Committee met on May 29, 1969, some concern was expressed over the fact that the child abuse problem is actually increasing in some areas of the State. It was recommended that the Society's Liaison Committee to the State Bar be contacted in the hope that some solution could be found to the problem of removing children from parents who inflict severe punishment.

Dr. Anderson reported that the Liaison Committee to the State Bar had been contacted. It was that Committee's recommendation that the problem be brought to the attention of Judge W. Francis Binford, Secretary-Treasurer of the Association of Judges of Courts Not of Record. The Liaison Committee to the State Bar stated that it would do everything possible to assist in obtaining needed amendments to the child abuse statutes.

The thought was expressed that absolute cooperation between the various professions and groups involved is

necessary if the problem is to be handled effectively. There must be better communication between physicians, social workers, judges, emergency room staffs, etc. Everyone agreed that it would be well to draw up a specific set of instructions to follow when reporting cases of child abuse and make sure they are posted in every hospital emergency room. All members of the hospital staff would be briefed on the instructions in order to make sure they are thoroughly understood.

The Committee also agreed that a letter should be directed to Judge Binford calling attention to the increasing problem of child abuse and expressing the hope that ways and means can be found to immediately remove children from abusive parents.

2. RUBELLA CAMPAIGN:

The Committee was advised that the time has come to make a special effort in the School Rubella Campaign. An epidemic might well be on its way and the time to act is now.

Dr. Hunt indicated that the vaccine had been somewhat difficult to obtain but that federal allocations seem to be improving. Normally, the vaccine is only supplied local health departments.

It was then suggested that The Medical Society of Virginia send bulletins to all physicians urging the immunization of children from age 1 to 9. The bulletin would point out that a rubella epidemic next year is a definite possibility.

Other communicable diseases were discussed and Dr. Anderson suggested that the Department of Health distribute a new Immunization Schedule to Virginia physicians.

It was brought out that getting some physicians to report cases of communicable disease is a real problem. It was suggested that perhaps a standard card form be attached to hospital admission forms. Then, should a communicable disease be found, the card could be quickly and easily completed and put in the mail.

3. SILVER NITRATE:

The use of silver nitrate in the eyes of the newborn was discussed once again and it was decided to recommend no departure from the present system.

4. INBORN ERRORS OF METABOLISM:

The Committee's attention was called to a memorandum from Dr. Hunt having to do with lab tests for inborn errors of metabolism. Those wishing to avail themselves of the tests should contact Dr. Peter Mamunes, Department of Pediatrics, Room 552, Medical Education Building, MCV, Richmond 23219.

5. PHYSICAL EXAMINATION FORMS:

The Committee learned that the Council of The Medical Society of Virginia had approved its recommendation endorsing the Standard Health Examination Form.

Dr. Hunt reported that the State Department of Welfare would like some recommendation from the Committee concerning use of the short form. The Department would then notify local departments concerning use of the form.

Everyone agreed that the form should be used widely and that camps, schools, etc. should be encouraged in this respect.

6. WHITE HOUSE CONFERENCE ON CHILDREN AND YOUTH:

Dr. Anderson reported that the White House Conference on Children and Youth is sponsoring a series of Regional Conferences in November. The main conference will be held in Washington from December 13-18 and approximately 3,000 delegates are expected to attend. There was considerable interest in the Conference and just who would be representing Virginia.

Dr. Hunt suggested that the proper person to contact concerning Conference representation would probably be Mr. James Hunter, Executive Secretary, Virginia Commission of Children and Youth, James Madison Building, 109 Governor Street, Richmond 23219.

Dr. Moss suggested that the Committee do whatever possible to have a representative pediatrician invited to attend. It was then determined that Dr. Anderson would write Dr. Hunter concerning the Committee's interest in the Conference—particularly with reference to representation.

7. DRUG ABUSE:

The drug abuse problem was discussed at considerable length—particularly the educational aspects. It was learned that the State Department of Health has made available to the schools special brochures and at least two films. The work of Dr. George Bright at the Medical College of Virginia was described and Dr. Hunt reported that he could use all the help he could obtain.

It was learned that a Special Committee on Drug Abuse is in the process of being appointed by Dr. Grossmann and is expected to be functioning in the very near future. Dr. Anderson expressed the hope that the new committee will become active immediately upon its appointment and expressed interest in discussing with it the need of half-way houses in Richmond and other areas of the state.

HARRY D. COX, M.D.
ROBERT M. MCDONALD, M.D.
WILLIAM D. LIDDLE, M.D.
RALPH OWNBY, JR., M.D.
JEFFERSON D. BEALE, JR., M.D.
W. GLENN HARDY, M.D.
KATHRYN D. HILL, M.D.
JULIA E. EDMUNDS, M.D.
NELSON S. PAYNE, M.D.
EDWIN L. KENDIG, M.D.
PATRICIA HUNT, M.D.
BARRINGTON H. BOWSER, M.D.
ROBERT H. ANDERSON, M.D., *Chairman*

National Legislation

Your Committee once again sponsored a luncheon for Virginia's Congressional delegation—an event which has become one of the true highlights of our Society year. Both Senators and all ten Congressmen attended and listened attentively during a short but thorough review of Virginia's medical problems.

This was the first time that our Congressional delegation had been briefed as a group on matters of concern to our medical educators, public health officials and private practice physicians. As a result, your Committee believes that there now exists a better understanding of the issues confronting the profession and a new appreciation of medicine's desire to provide the best possible medical care to all Virginians. For our part, we came away with the firm conviction that Virginia has the best Congressional delegation in the Nation.

RICHARD E. PALMER, M.D., *Chairman*

Maternal Health

The Committee on Maternal Health had two meetings during the past year.

During the October, 1969, meeting, the Committee recommended that: Where possible, members of the Society participate as clinicians in Maternal Health Clinics conducted by the State Health Department throughout the State. There are some areas of the State where no clinical service is provided for medically indigent patients due to lack of clinicians in such areas.

It is the hope of the Committee that the Academy of General Practice will develop increasing interest and participation by its members in obstetrical practice.

Review of the Maternity Hospital Law by the Committee is continuing, and it is expected that recommendations will be made to the Medical Society which the Committee feels will improve quality of care in the hospitals throughout the State. The Society then may wish to make proposals to the 1972 session of the General Assembly on these matters.

When an obstetrical department of a hospital closes and physicians from that institution desire to transfer their practice to one where obstetrics is performed, the Committee recommends that the second facility, where possible, provide privileges commensurate with the training and experience of the physician requesting such privileges.

The maternal death statistics for 1968: total maternal deaths 13, maternal death rate 1.6 per 10,000 live births. This is the lowest death rate ever recorded in Virginia and for the second year is below the national rate—white deaths, 6, non-white, 7; white rate 0.9, non-white 3.7.

At the July 10 meeting, the Committee was pleased to hear that three of the very small maternity facilities in the State requested that their licenses not be renewed and an application for another very small facility was withdrawn. The Committee feels strongly that while physicians maintaining these "hospitals" do provide care for patients and are to be commended for their service, the facilities are unable to support required personnel and equipment necessary for complete care for maternal pathology.

The Committee approved the letter from the State Health Department clarifying the reporting of all fetal deaths. With the advent of the new Abortion Law, when a therapeutic abortion is performed, it is to be shown as the primary cause of death on the Fetal Death Record. Some concern was expressed that the addition of fetal deaths produced by therapeutic abortion to those which occur spontaneously will leave an incorrect impression as to the type of care maternity patients receive in Virginia. Understanding that all physicians adhere to the letter and spirit of the Law, it will be an easy matter to indicate what is the number and the percentage of fetal deaths due to therapeutic abortions.

The concept of "nurse clinician" to relieve the work of the physician clinician with normal cases was endorsed by the Committee.

Consideration was given to the subject of nurse midwives for normal cases in hospitals. It was felt that such personnel could be of great help where there is no house staff and a dwindling number of practicing physicians who perform deliveries. The possibility of legal involvement and responsibility for the hospital, physician, and nurse midwife was considered. The Committee understands that the Virginia Obstetrical and Gynecological Society is not in favor of midwives. Review of information gathered through the State for the year 1967 was reconsidered. That study showed over 12,000 patients, or 10.3 per cent of all deliveries were "service" deliveries by attending physicians. We agreed that the number and percentage of such deliveries by private-practicing physicians has undoubtedly increased since that time, while the number of physicians performing the deliveries has decreased. The Chairman of the Committee has been requested to communicate with the President of the Society asking that a committee be appointed to explore and develop a method or methods for delivery and care of medically indigent patients in the State which will be more equitable and hopefully relieve the pressure on the private-practicing physician.

Enthusiastic support is given hy the Committee to an educational TV and radio program for the State population on the importance of maternity care. This program is being sponsored by the State Department of Health and the Medical Society.

1969 maternal deaths 17. Rate 2.0 per 10,000 live births. White 10, rate 1.5. Non-white 7. Rate 3.8. Live births increased by 1,282 in 1969.

MASON C. ANDREWS, M.D.
WILLIAM H. COX, M.D.
GARRETT DALTON, M.D.
LEO DUNN, M.D.
JAMES M. HABEL, JR., M.D.
BROCK D. JONES, JR., M.D.
JOHN R. SAUNDERS, M.D.
GEORGE SPECK, M.D.
WILLIAM N. THORNTON, JR., M.D.
FRANK G. TURNER, M.D.
JAMES J. DUNNE, M.D., *Secretary*
CHESTER L. RILEY, M.D., *Chairman*

Woman's Auxiliary . . . .

Forty-Eighth Annual Convention
Woman's Auxiliary to
The Medical Society of Virginia

October 11, 12, 13 and 14, 1970

John Marshall Hotel

Richmond, Virginia

A cordial invitation is extended to all members of the Woman's Auxiliary to The Medical Society of Virginia, their guests, and the wives of physicians attending the Society convention to participate in the social functions and to attend the general meeting of the Auxiliary. Members and guests are requested to register.

REGISTRATION—Upper Lobby, John Marshall Hotel

Sunday, October 11—1:00 to 5:00 P.M.
Monday, October 12—8:00 A.M. to noon

SUNDAY, OCTOBER 11

3:00 P.M.—Prevention Board Meeting—Monroe Room, Mezzanine

7:30 P.M.—VaMPAC Banquet

MONDAY, OCTOBER 12

8:00 A.M.—Continental Breakfast—Patrick Henry Room, Mezzanine

9:00 A.M.—Formal Opening of Forty-Eighth Annual Meeting

Mrs. Joseph M. Straughan, President, presiding

Invocation—Mrs. F. Clyde Bedsaul, Chaplain

Pledge of Allegiance to the Flag

Pledge of Loyalty—"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

Address of Welcome—Mrs. Isadore S. Zfass, President, Auxiliary to the Richmond Academy of Medicine

Response

Greetings—James M. Moss, M.D., President-Elect, The Medical Society of Virginia

Presentation of Honored Guests—Mrs. Joseph M. Straughan

Convention Announcements—Mrs. Randolph Hoge, Convention Chairman

Convention Rules of Order—Mrs. Thomas Hunnicutt, Jr., Parliamentarian

Roll Call—Mrs. Donald F. Fletcher, Jr., Recording Secretary

Minutes of the Forty-seventh Annual Convention—Report of the Reading Committee—Mrs. Thomas Hunnicutt, Jr.

Report of the Treasurer—Mrs. David B. Hill

Report of Auditing Committee—Mrs. W. Clarke Pole

Report of Credentials Committee—Mrs. Thomas P. Overton

Recognition of State Officers and Committee Chairmen

Recommendations from the Board

Report of the Finance Committee—Mrs. Robert D. Keeling

Unfinished and New Business

Greetings from Southern Medical Auxiliary

Keynote Address

Report of Delegates to Forty-Seventh Annual Convention of the Woman's Auxiliary to the A.M.A.—Mrs. David B. Hill

Presentation of Awards—Mrs. Francis G. Griffin

Presentation of State Scrapbook—Mrs. Carl Stark, Historian

Report of Nominating Committee—Mrs. Robert D. Keeling

Election of Officers

Courtesy Resolutions—Mrs. William N. Gordge

Memorial Service—Mrs. F. Clyde Bedsaul

Adjournment

12:00 P.M.—Busses leave for the The Virginia Museum of Fine Arts for the annual luncheon and tour of the new wing of the Museum

12:30 P.M.—Luncheon—Mrs. Joseph M. Straughan, presiding

Invocation—Mrs. F. Clyde Bedsaul

Recognition—Honored guests and past presidents

Presentation of President's Scrapbook—Mrs. Carl Stark

Installation of Officers

Acceptance—Mrs. Reuben F. Simms, Richmond, New President

Presentation of Pin and Gavel—Mrs. Joseph M. Straughan

Presentation of Past President's Pin—Mrs. Robert D. Keeling

Convention Announcements—Mrs. Randolph Hoge

Convention Acknowledgments

Adjournment

6:30 P.M.—The Medical Society of Virginia Banquet

TUESDAY, OCTOBER 13

8:00 A.M.—Continental Breakfast—Chateau Room, 14th Floor

Past Presidents' Breakfast—Byrd Room, Mezzanine

9:00 A.M.—Post-Convention Board Meeting — Monroe Room, Mezzanine—Mrs. Reuben F. Simms, presiding. All new State Officers, Directors, Committee Chairmen, County Presidents and Presidents-Elect are requested to attend. Out-of-State Auxiliary guests are invited.

3:00-5:00 P.M.—Tea at Windsor. Transportation provided.

4:00 P.M.—Nominating Committee Meeting

6:30 P.M.—Medical College of Virginia Alumni
University of Virginia Alumni

Schering

After only one year:

Administered to more people than live in Lynchburg and Newport News.*



Injectable Garamycin®

brand of gentamicin sulfate injection

An estimated 208,000 patients have received GARAMYCIN Injectable to date. The combined population of Lynchburg and Newport News is 193,000. (Estimated 1969 figures from The New York Times Encyclopedic Almanac 1970.)

See Clinical Considerations section on last page...

Injectable Garamycin®
brand of gentamicin sulfate injection

Schering

ADULT DOSAGE GUIDELINES

See definitive prescribing information in Package Insert.

Patients with Normal Renal Function

Total Daily Dose (administered in two, three, or four divided doses)			
	Less Severe	Resistant/ Moderately Severe	Serious/Life-Threatening
Urinary Tract Infections (due to susceptible strains of gram-negative bacteria)†	0.8-1.2 mg./kg. for 7-10 days	Larger doses or additional antibacterial therapy should be considered in severe urinary tract infections or in resistant cases involving the renal parenchyma or anatomic anomaly.	up to 5 mg./kg.
Other Infections including bacteremia, infected surgical wounds, severe soft tissue infections, and respiratory tract infections (due to susceptible strains of gram-negative bacteria)	3 mg./kg. for 7-10 days		

†Alkalinization of the urine may be a useful therapeutic adjunct.

Patients with Impaired Renal Function

To minimize the risk of ototoxicity in patients with impaired kidney function, only the first dose should be that normally recommended. Each subsequent dose should be half or less of that recommended for patients with normal renal function, depending upon the degree of renal impairment.

In patients with renal failure who are undergoing 14-hour hemodialysis twice weekly, administration of 1 mg./kg. GARAMYCIN Injectable at the end of each dialysis period has been suggested.

Clinical Considerations

Indications: GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including *Pseudomonas aeruginosa,* and species of indole-positive and indole-negative *Proteus, Escherichia coli,* and *Klebsiella-Aerobacter.* Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

IN VITRO INHIBITION OF CLINICALLY IMPORTANT BACTERIA BY GENTAMICIN SULFATE (TUBE DILUTION STUDIES)

BACTERIA	No. of Strains Tested	No. of Strains (%) Inhibited by: 4 mcg./cc. or less		8 mcg./cc. or less*		No. of *In Vitro* Studies
Staphylococcus aureus	1,210	1,200	(99%)	1,206	(99%)	11
Pseudomonas aeruginosa	885	771	(87%)	828	(93%)	16
Escherichia coli	836	736	(88%)	779	(93%)	11
Indole-positive and indole-negative *Proteus* species	477	210	(44%)	358	(75%)	12
Klebsiella-Aerobacter species	292	205	(70%)	231	(79%)	10

*Number of strains (%) of gram-negative bacteria inhibited by 10 mcg./cc. or less are as follows: *Pseudomonas aeruginosa,* 828 (93%); *Escherichia coli,* 792 (95%); *Proteus* species, 393 (82%); *Klebsiella-Aerobacter* species, 284 (97%). From same studies as above.
Source: Package Insert

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly *Pseudomonas aeruginosa, Proteus* and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

Contraindications: GARAMYCIN Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

Warnings: Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with pre-existing renal damage, treated with GARAMYCIN Injectable, usually for longer periods or with higher doses than recommended.

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with pre-existing renal impairment. Kidney function diminished by infection of the upper urinary tract may, however, improve during effective treatment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs such as streptomycin and kanamycin or of potentially nephrotoxic drugs such as polymyxin, colistin, and kanamycin with gentamicin sulfate has not been shown to afford any clinical advantages and, moreover may result in additive toxicity. Monitoring of vestibular, cochlear, and renal function will provide guidance for therapy in such cases.

Precautions: In patients with impaired renal function in whom serious infection develops, serum concentrations of the drug may rise, with consequently increased risk of ototoxicity. In these patients or in those in whom recommended dosage or duration of therapy must be exceeded as a life-saving measure, routine studies of kidney function should be performed when possible. These may be supplemented by evaluation of the vestibular and auditory function and measurement of serum concentration of the drug when feasible. Serum concentrations of gentamicin should be maintained below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to 10 days or be repeated unless required for serious infection not responsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Injectable may occasionally result in overgrowth of nonsensitive organisms. If superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity or nephrotoxicity have not been established. Studies in pregnant animals have not revealed teratogenic or ototoxic effects in the fetus. GARAMYCIN Injectable should not be used in pregnant patients or in women of childbearing age unless its use is deemed advisable by the physician.

Adverse Reactions: The overall incidence of ototoxicity considered related to treatment with GARAMYCIN Injectable was 2.8 per cent (16 of 565 patients). Contributory factors (two or more factors were relevant to most patients) were as follows: 10 had azotemia, 7 received a total of 1 gram or more of the drug, 7 had recently received other potentially ototoxic antibiotics (streptomycin or kanamycin), and 5 were over 60 years of age. Six also had decreased high-tone hearing acuity, which returned to or toward normal in the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients showed increases in BUN that were probably related to treatment with GARAMYCIN Injectable. Of 20 increases probably or possibly related to treatment, 7 were reversible, 9 occurred in terminal patients, and 4 had no follow-up.

Other adverse reactions associated with treatment were one instance each of urticaria, decreased hematocrit, and reversible depression of granulocytes with normal bone marrow. Other rarely reported and possibly treatment-related adverse reactions were anemia, increased reticulocyte count, rash, purpura, drug fever, hypotension, convulsions, twitching, salivation, nausea, vomiting, increased transaminase activity (SGOT or SGPT), increased serum bilirubin, decreased serum calcium, and joint pain.

Packaging: GARAMYCIN Injectable, 40 mg./cc., 2-cc. multiple-dose vials, for intramuscular administration.

For more complete prescribing details, consult package insert, Physicians' Desk Reference. Schering literature is also available from your Schering Representative or Medical Services Department, Schering Corporation, Union, New Jersey 07083.

AHFS CATEGORY 8:12.28

5-



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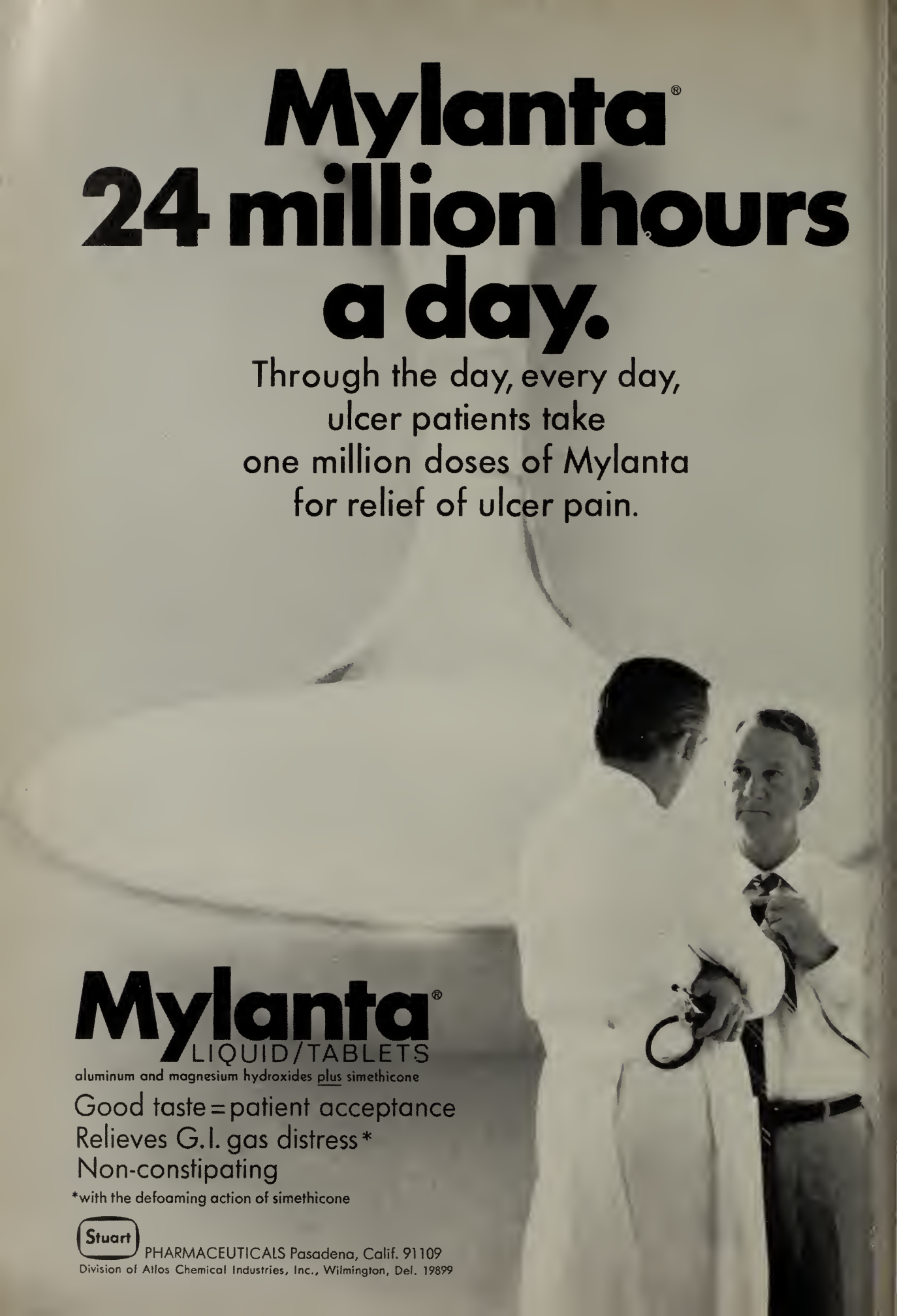
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Alexandria Is Justifiably Proud

. . . of a thorough drug resource book on drug abuse which has been compiled by their children and youth chairman, Mrs. Arnold Kaplin (Marcia). The book has already been approved by the Alexandria school board as one of the most complete works of its kind which will be used as a resource book for kindergarten through the twelfth grade. It is scheduled to be implemented into the school program this autumn. It covers information on abused drugs, legal aspects, terms and definitions, treatments, psychology behind drug abuse and the philosophy of education. The auxiliary has already had a number of requests for copies and the book is barely hot off the presses. The auxiliary is working in conjunction with the school system to set up a drug abuse curriculum for grades kindergarten through the sixth grade. Marcia and her committee are currently planning four in-service training programs for elementary school teachers. The Alexandria Medical Society has given them a vote of confidence and various other organizations have expressed their interest in it. If you desire additional information, please contact Mrs. Arnold Kaplin, 1207 Knox Place, Alexandria 22304.

Alexandria Is Equally Proud

. . . of their member, Mrs. William H. Young (Mitzie) who has been chosen "Outstanding Woman of the Year" by the Soroptimists Club of Alexandria. Mitzie, a psychiatrist's wife and the mother of four active children received a master's degree in psychiatric social work from the University of Chicago. She has been active in improving community relations with the medical profession in general and at one time or another has been active in twenty-seven different community organizations. Several of the organizations are chairman of community service for the auxiliary for which she set up the guidelines to corporate the auxiliary volunteer service with Hopkins House in their joint shoe center venture; charter member of DELTA (Drug Education Legislation and Treatment Association); one of the founders of the Alexandria Mental Health Association (AMHA), Youth Dialogue Program chairman, lecturer and was appointed by the city council to serve on the Alexandria Drug Abuse committee.

Roanoke Became Interested

. . . this past year in the "Doctor to Doctor Program". Mrs. C. Leon Jennings, auxiliary president at the time, contacted Dr. Robert Rath in Wonju, Korea (Roanoke's sister city). Dr. Rath, a Methodist medical missionary, could indeed use films, slides, pamphlets etc. to educate the Korean people in public health. Their international health chairman, Mrs. James P. King, Jr., Jane, collected and mailed several boxes which were put to good use. In addition several issues of M.D.'s Wife were collected and sent to doctors' wives in Wonju. Correspondence among several of the wives began and has continued. This project has been mutually satisfying and improved their *international relations.*

Fairfax Was Asked

. . . to communicate with M.D.'s Wife on their horse show this year, and subsequently an article appeared in the July issue under the title "A Day at Frying Pan Park".

Editorial ....

Gouging the Public

YOU WOULDN'T HAVE LEARNED about it from the recent television broadcast on medical care, which, in its treatment of the medical profession, was unprecedented in savagery and distortion. But, it seems that doctors aren't "gouging the public" after all!

Around a month ago, in a series of articles on health care costs, the Associated Press conceded that "a visit to the doctor's office remains a bargain, costing only about a dollar more than it did a few years ago." It must be said that it required substantial labor to find anything favorable to doctors in this material, which was obviously designed to beat the drums for a system of federalized medicine. The articles also admitted that overhead is a part of the doctors' fee, and that this is a point often overlooked by writers on health care costs.

The April 13, 1970, AMA *News Letter* provides some interesting statistics from Robert J. Meyers' new book, *Medicare*, which has presented a comparison of annual increases in physicians' fees and general wages.

The average annual increase in physicians' fees for the years 1956 through 1965 was 3%; the average increase in wages during the period was 3.6%. Mr. Meyers, who was the Social Security Administration's chief actuary, said physicians' fees were expected to increase "over the short-range future" after the passage of Medicare. The increases were 5.9% in 1966, 7.3% in 1967, and 5.5% in 1968. Nevertheless, the total fee increase during the three-year period was only 1% above the rise in the general wage level. The author's comparison disclosed that from 1956 to 1968, the average annual increase in physicians' fees was 0.5% below the average annual increase in general wages. During the twelve year period, wages rose an average of 4.2% each year. Physicians' fees went up 3.7%.

As the AP articles imply, the comparison doesn't tell the whole story. The physicians' fee must include 35-40% or more for overhead, and the physician must provide his own fringe benefits from the fee. Most wage earners have no overhead, and their fringe benefits, which are 15-20% of their annual salaries, are provided in addition to their wages. If these two factors were deducted from physicians' fees we should find that the increase in physicians' "wages" has lagged far behind the annual increase in the wages of others, even during the unusual economic period following the enactment of Medicare. It is pretty plain that doctors have no control over many of their costs—salaries, rents, supplies, and insurance.

It seems to us that while the increase in the costs of practicing medicine has been passed on to the public partly in the form of fee increases, they have been partly absorbed also by the physician in the form of reduction of net income.

Obviously, news of this kind is not acceptable to politicians and social reformers, including members of our own profession, who have been so

aggressive in causing us injury as a precondition to achieving their goal of a national medical service.

Government medicine will be here soon enough, but, to our knowledge, social planners, including their partisans in the medical profession who refer to the present system of health care as a "cottage industry", haven't as yet determined how the problems of cost in their future government systems will be accommodated when these too begin to break down due to overload. For, after all, the demand for medical services is unlimited.

Those who favor a Federal System of medicine might have tried to accomplish their aims by fair means, through reasonable argument, instead of resorting to misrepresentation and the destruction of the credibility of the medical profession. It just may be that the problems of the future may not be handled as easily.

At least that's the way it looks to us.

WILLIAM H. KAUFMAN, M.D.

It's True!

AN EDITORIAL appeared in the June issue of the Virginia Medical Monthly dealing with American medicine as presented by the Columbia Broadcasting System on April 20 and 21. The writer raised the question as to what organization or group prompted this bitter attack on medicine. It was suggested that the sponsors that included Johnson's Wax, AT&T and Playtex Girdles probably didn't give a hoot about medicine as long as the women of America wore a Playtex Girdle while polishing the floor with Johnson's Wax or using that AT&T telephone.

The author did point out that an article in the *Wall Street Journal* a few days before this TV program referred to "a small band of crusaders" (including Walter Reuther, actor E. G. Marshall, Michael DeBakey and Teddy Kennedy) that was planning "to get the Federal government to pay everyone's medical bills". The VMM editorial opined that "In all probability our hidden enemies can be found in this group and we doubtless shall know more about it in the near future."

The denouement came earlier than anticipated, for on July 13, the American Medical News carried the headline "Reuther's 'health' security plan is unveiled". The proposed program "would absorb" Medicare and most other government and private health insurance.

Sure enough, the chairman of the committee is the new president of the United Auto Workers, Leonard Woodcock, who succeeded Walter Reuther after the latter's death in a plane crash on May 10. We also find the vice-chairman is none other than the ubiquitous Michael DeBakey. Others who attended the news conference included Mrs. Albert D. Lasker, president, Albert and Mary Lasker Foundation; Whitney M. Young Jr., executive director, National Urban League; Frank Furstenberg, M.D., Sinai Hospital, Baltimore; I. S. Folk, Ph.D., professor emeritus, Yale University; and last, but not least, Senator Edward M. Kennedy, once again in circulation after receiving a scotch verdict of "guilt not proven" but bereft of his former aroma of roses. What a jolly group! If one is known

by his enemies we must be a very decent lot. But we are still sorry to learn we were right in the first place.

The Saga of a "Louisiana Tiger"

THE CASE REPORT in this issue of the Virginia Medical Monthly by Medical Examiner, Dr. A. Jay Chapman, who now lives in Fort Worth, Texas, is moving and in many ways unusual. Mr. William Kay, Historian of the Battlefield Park Services, also was present when Pvt. T's coffin was opened and he obtained much background material for his official report about the circumstances attending this Confederate's last engagement and his death. This information has been called upon freely by the writer who learned about it very recently.

The coffin was discovered on April 20 while a bulldozer was leveling a green on a new golf course for the appropriately named Confederate Hills Club, near Highland Springs, a few miles east of Richmond. There were no other known graves in the neighborhood. The 5th Louisiana Regiment was engaged on May 24, 1862, at New Bridge where it was guarding this important crossing of the Chickahominy River during McClellan's deliberate approach to Richmond, just one week prior to the Battle of Seven Pines. The costly fighting that began with Seven Pines and terminated five weeks later at Malvern Hill obscured this little battle and relegated it to the category of a skirmish with the Fourth Michigan Regiment. Strictly speaking the 5th Regiment of Louisiana Volunteers was not listed as "Louisiana Tigers". The unit that carried this designation was busily engaged with Stonewall Jackson in the Valley of Virginia during the month of May. However, the manner in which these Louisianians handled themselves during the encounter at New Bridge prompted McClellan to refer to them as "Louisiana Tigers" in his official report of the engagement.

Eighteen Louisianians were killed and 23 were wounded. Thirty-four were captured. The overall mortality was not high by Civil War standards but it is all too easy to forget that from the standpoint of Pvt. T the mortality was 100%. His captain wrote the usual letter of condolence to the soldier's family in Louisiana and described his injury as a bullet wound with a point of entrance just above his right eye and a wound of exit near his jaw. The captain must not have examined it very closely for the injury was actually far more devastating. The greater portion of the right frontal, temporal and parietal bones was blasted away with extensive underlying brain damage. This wound emphasizes the lethal power of the soft, conical, lead minie projectile fired from the rifled muskets with which the Fourth Michigan was armed. The 5th Louisiana had only smooth bore muskets with spherical bullets and they discovered the Federals could still outshoot them after they had driven the Unionists back across the Chickahominy. George A. Custer, then a lieutenant, participated in this engagement.

Private T's comrades procured a cast iron coffin, probably purchased from a furniture store in Richmond and made by the Tredegar Iron Works. A lull followed the fighting and this continued for several days.

His friends took this opportunity to inter him near "Old Tavern", as it was then designated, near the Nine Mile Road. Why this spot was chosen is uncertain. As there were no other known graves in this area, perhaps the original plan was to return his body to Louisiana after the war. This thought doubtless motivated many other isolated burials in Virginia during those terrible years but these temporary graves usually became permanent ones, for few were returned to the deep South because of the universal poverty that followed the war.

The artifacts in the coffin were remarkably well preserved. This Louisianian had evidently been issued a new uniform a few days before the 24th of May. His gray woolen tunic and trousers and white socks showed no wear and only a cuff of Virginia clay was evident about the lower edges of his trousers. There had been repeated rains during the preceding few days and his clothing and the U.S. blanket were doubtless drenched when he was placed in the coffin. This may have explained the unusual degree of preservation described by Dr. Chapman in his report. Mr. Kay identified the cadet gray wool of his uniform as having been made by the Charlottesville Woolen Company, an ancient institution that closed its doors only a few months ago. His linen shirt also had been preserved by the water within the coffin but all cotton thread had disappeared from the spool in his pocket as well as the cotton thread that sewed the woolen garments together. The buttons on his tunic carried the State Seal of Louisiana with the customary "pelican" stamped on the outer face and Waterbury MFG Co. Scoville, on the under surface. This Connecticut firm, which was never one to pass up a good business deal, made many buttons for the South and continues to operate today. They appear to specialize in buttons for uniforms and many of the capes worn by nurses today have their stamp on the reverse. The "CSA" buttons made from original dies preserved by the firm and sold as novelties during the recent Civil War Centennial came from the Waterbury company.

His shoes showed scarcely any wear, which bears out the supposition that his wearables must have been of very recent issue. The 5th Louisiana had been in Virginia almost a year and had spent a busy April and May with sharp encounters with McClellan's army first at Yorktown and again a few weeks later in Williamsburg. They doubtless needed refitting following these encounters and the long winter which preceded them. The fact that his shoes were buried with Pvt. T points up the fact that such footwear must have been readily available as late as the Spring of 1862. The only other personal belonging found in the coffin was a gutta-percha (rubber) finger ring.

This then is the short but revealing story of a rather affluent young man, as indicated by the dental work and the cost of his coffin, and in fact, borne out subsequently by his family connections in Louisiana. While serving as a private, he made the long trek to Virginia only to fall before Richmond. Fortunately, however, he continues to be in the hands of friends and now he rests in the Confederate section of Hollywood Cemetery with 20,000 of his comrades.

May his sleep, henceforth, be undisturbed. H. J. W.

News . . . .

Calendar of Events

The Whitman Memorial Lecture Series—Sponsored by Lewis-Gale Medical Foundation—Program entitled "What's New at the Medical College of Virginia in 1970"—Roanoke—September 10, 1970.

National Congress on Medical Ethics—Sponsored by Judicial Council of American Medical Association—Ambassador West Hotel—Chicago—September 19-20, 1970.

Association of American Physicians and Surgeons—Annual Meeting—Hotel John Marshall—Richmond—September 30-October 3, 1970.

The Medical Society of Virginia—Annual Meeting—Hotel John Marshall—Richmond—October 11-14, 1970.

Symposium on Emergency Room Procedure—Sponsored by St. Mary's Hospital—Richmond—Afternoon of October 14-15, 1970.

Tennessee Valley Medical Assembly—Read House—Chattanooga, Tennessee—October 19-20, 1970.

American Cancer Society, Virginia Division—Annual Meeting—Hotel Jefferson—Richmond—October 21-22, 1970.

Interstate Post Graduate Medical Association of North America—1970 Assembly—Palmer House—Chicago—November 2-5, 1970.

Symposium on Radiology and Nuclear Medicine—Presented by Department of Radiology, Memorial Hospital, Danville, and Department of Radiology, Duke University Medical Center—Memorial Hospital—Danville—November 4-6, 1970.

Congress of County Medical Societies—Annual Meeting and Seminar on Private Practice—Netherland Hilton Hotel—Cincinnati, Ohio—November 6-8, 1970.

Virginia Hospital Association—Annual Meeting—The Homestead—Hot Springs—November 12-13, 1970.

American Heart Association—Scientific Sessions—Convention Hall—Atlantic City, New Jersey—November 12-15, 1970.

Pediatric Post Graduate Course—Problems in the Newborn Infant—University of Virginia School of Medicine—Charlottesville—November 13-14, 1970.

Southern Medical Association—Annual Meeting—Dallas, Texas—November 16-19, 1970.

American Medical Association—Clinical Session—Boston—November 29-December 2, 1970.

National Conference on Cancer of the Colon and Rectum—Hotel del Coronado, San Diego, California—January 7-9, 1971.

Virginia Academy of General Practice—Annual Assembly—The Homestead—Hot Springs—March 10-14, 1971.

Roanoke Memorial Hospital Postgraduate Program—Roanoke—March 18-19, 1971.

New Members.

The following physicians were received into membership of The Medical Society of Virginia during the month of July:

Berton William Ashman, M.D., Virginia Beach
Charles Stuart Buchanan, M.D., Winchester
Clem Casper Crossland, M.D., Holland
Michael Eugene Davidov, M.D., Arlington
John Samuel Gremer, M.D., Tabb
Francis Joseph Heck, M.D., Fairfax
Robert John Hoagland, M.D., Warrenton
John Thomas Hulvey, M.D., Abingdon
Richard Andrew Liguori, M.D., Fairfax
Joseph Alfred Ragione, M.D., Roanoke
Jeffrey Lee Rush, M.D., Virginia Beach
Luis Mario Salcedo, M.D., Norton
Richard Haller Skeppstrom, M.D., Fredericksburg
Lawrence Earl Southworth, M.D., Fredericksburg
Stuart Barry Wollman, M.D., Winchester

New Medical Society.

The Stuart Medical Society has been chartered by The Medical Society of Virginia, making the 49th component medical society. The new society is composed of all practicing physicians in Stuart County. Dr. W. Nash Thompson is president; Dr. Edwin T. McNamee, vice-president, and Dr. Manuel Tayko, secretary-treasurer.

Lynchburg Academy of Medicine.

New officers for the Academy are: president, Dr. Powell G. Dillard, Jr.; vice-president, Dr. Joseph E. Mathias; secretary-treasurer, Dr. Robert L. Glenn (re-elected).

Dr. Owen Gwathmey,

Richmond and Aylett, has been appointed by Governor Linwood Holton to the Board of Visitors of Virginia Commonwealth University.

Dr. Michael Homa,

Springfield, has been appointed by Governor Linwood Holton to the Virginia Hospital Council.

Dr. Bradford S. Bennett,

Manassas, has recently returned from a month's study in England and Switzerland.

Comprehensive Health Screening System.

The Medical College of Virginia will begin construction this fall on a new comprehensive health screening system that will rely on automation and computers for early detection of diseases and for more efficient use of the physician's professional skills and time. This system is a first for Virginia and is one of several pioneer projects in the nation. The screening center is designed to give comprehensive health examinations to 100 patients per day with an annual patient load estimated at 20,000 persons.

The system will be directed by Dr. Robert W. Jessee, professor of preventive medicine.

Radiology and Nuclear Medicine Symposium.

This symposium is to be presented by the Department of Radiology, Memorial Hospital, Danville, and the Department of Radiology, Duke University, Durham, North Carolina, November 4-6. It will be held in the Nurses' Auditorium of Memorial Hospital.

Faculty members are: Dr. David H. Baker, Columbia, University, New York; Dr. M. Paul Capp, Duke University; Dr. Patrick J. Cavanaugh, Duke University; Dr James T. T. Chen, Duke University; Dr.

John A. Evans, Cornell University, New York; Dr. Robert G. Fraser, McGill University, Montreal, Canada; Dr. John A. Goree, Duke University; Dr. Alexander Gottschalk, University of Chicago, Chicago; Dr. Sadek K. Hilal, Columbia University, New York; Dr. Theodore E. Keats, University of Virginia, Charlottesville; Dr. Richard G. Lester, Duke University; Dr. Robert McLelland, Memorial Hospital and Duke University; Dr. James F. Martin, Bowman-Gray School of Medicine, Winston-Salem; Dr. Isadore Meschan, Bowman-Gray School of Medicine; Dr. James H. Scatliff, University of North Carolina, Chapel Hill; and Dr. Bernard S. Wolff, Mt. Sinai School of Medicine, New York.

Further information may be obtained from Dr. Robert McLelland, Director, Department of Radiology, Memorial Hospital, Danville, Virginia 24541.

State Board of Medical Examiners.

The reports of the June meeting of the Board show that 78 foreign graduates took the basic science part of the examination and 70% of them failed. The remaining 24 took part two, along with 45 foreign graduates who did not have to take part one. Of these 69, there were 14 failures.

In other words, 55 of 114 foreign graduates were licensed. There were 168 applicants who were graduates of Virginia medical schools and there were two failures. Six other graduates of other schools were licensed.

There were 202 doctors licensed by endorsement and 227 licensed by examination, making a total of 429 new licensed doctors in the State of Virginia.

History of Medicine Essay Contest

Two University of Virginia School of Medicine students have taken top honors in a "History of Medicine" essay contest at the University.

William F. Greenough, first-year student from Carpinteria, Calif., won the $150 first prize for his essay on "The Early History of Radiology in Medicine".

Gerald S. Davis, fourth-year student from Charlottesville, won the $100 second prize for his essay on "A 19th Century Formulary". His paper describes a medicine chest now in the University Medical Library collection of medical instruments and once owned by Joseph Edwin Cox of Petersburg.

Annual Medical Seminar.

The 18th annual medical seminar sponsored jointly by the Bluefield Sanitarium, Bluefield, West Virginia, the Stevens Clinic, Welch, West Virginia, and the Clinch Valley Clinic, Richlands, will be held on October 15 at the Bluefield Country Club.

Guest speakers will be: Dr. Joseph Ransohoff, New York University Medical Center; Dr. Charles Hess, University of Virginia, Charlottesville; Dr. Joell T. Schrank, University of Virginia; and Dr. Harry Meyer, National Institutes of Health. The after-dinner speaker will be Rear Admiral Franklin H. Price of the United States Navy.

Information may be obtained from Dr. William F. Hillier, Jr., Bluefield Sanitarium, Bluefield, West Virginia.

The American Board of Family Practice

Will give its second examination for certification in various centers throughout the United States, February 27-28, 1971. Information may be obtained from Nicholas J. Pisacano, M.D., Secretary-Treasurer, American Board of Family Practice, Inc., University of Kentucky Medical Center, Annex #2, Room 229, Lexington, Kentucky. Deadline for receiving completed applications is November 1, 1970.

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Contraindications: Known sensitivity to sulfonamides.
Precautions/Adverse Reactions: The usual precautions for topical and systemic sulfonamides should be observed because of the possibility of absorption. Burning, increased local discomfort, skin rash, urticaria or other manifestations of sulfonamide toxicity are reasons to discontinue treatment.
Dosage: One applicatorful or one suppository intravaginally once or twice daily.
Supplied: Cream – Four-ounce tube with or without applicator. Suppositories – Box of 12 with applicator.

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Wanted.

Full time staff physician for Student Health Service at Virginia Polytechnic Institute, Blacksburg. For further information, write or call Emory R. Irvin, M.D., Blacksburg 24060. Phone 552-6444. (*Adv.*)

Wanted.

Doctor to share medical offices in excellent location, one or two afternoons a week in Fairfax City, Mosby Building. Suitable for OB, GYN, ENT, Psychiatrist, or Dermatologist. Call 703-273-3613. (*Adv.*)

For Sale.

Profex fluoroscopic and radiographic unit, 500MA Juniper Generator, 150 KV, 90°-15° Emperor tilt-table with sliding top, automatic spot film device, image intensification, floor to ceiling tube stand. Five years old.

Picker fluoroscopic and radiographic unit, 200 MA, Centurian 90°-15° tilt-table, conventional fluoroscope, spot film device, Bi-rail tube stand, laminograph attachment. Twelve years old.

Profex automatic film processor, 90 seconds. Three years old.

All units have been carefully maintained in a private office and are in excellent operating condition.

Write to #170, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia 23221. (*Adv.*)

For Sale.

Medical and Office equipment from estate —Paymaster Check Protector; Picker X-Ray Corporation Fluoroscope; Graf-apsco Microscope; Unimeter #250 Bio-Dynamics; Model 210 Centrifuge. Central National Bank, 644-6011, ext. 411, P. O. Box 1838, Richmond, Virginia 23215. (*Adv.*)

Practice Available.

Large medical practice available, internist or generalist, Falls Church, Virginia. Will introduce. All equipment reasonable. Contact #180, care Virginia Medical Monthly, 4205 Dover Road, Richmond, Virginia 23221. (*Adv.*)

Physicians Wanted.

Full time emergency room coverage in active emergency room of 191-bed, accredited hospital, in the beautiful Shenandoah Valley of Virginia. Guaranteed annual income. Contact Administrator, King's Daughters' Hospital, Staunton, Virginia 22401. (*Adv.*)

Obituary . . . .

Dr. Robert Lucas Ozlin,

South Hill, died July 16. He was eighty years of age and a graduate of the Medical College of Virginia in 1914. Dr. Ozlin began his practice in Dundas and in 1922 he became affiliated with the Polyclinic in New York. He returned to South Hill in 1949 and practiced there until his retirement in 1969. Dr. Ozlin served with the U. S. Army during World War I. He had been a member of The Medical Society of Virginia for fifty-four years.

A brother and a sister survive him.

Dr. Vincent Jerome Meads,

Portsmouth, died June 30, at the age of sixty-seven. He was a graduate of the Medical College of Virginia in 1928, following which he began his practice in Portsmouth. Dr. Meads retired in 1967. He had been a member of The Medical Society of Virginia for thirty-nine years.

Two sons and a daughter survive him.

Dr. William Henry Parker,

Hampton, died July 8 after an extended illness. He was sixty-four years of age and received his medical degree from the University of Virginia in 1931. Dr. Parker practiced at the University until 1953 when he became a member of the staff of Dixie Hospital, serving until his retirement in 1965. He had been a member of The Medical Society of Virginia for thirty-three years.

His wife, two daughters and a son survive him.

Dr. Tunstall.

Cuthbert Tunstall was born in Norfolk 28 November 1892 and died in Fredericksburg 3 May 1970. He received the traditional education of a Virginia gentleman of his period: Episcopal High School at Alexandria and the University of Virginia, affectionately called *the* high school and *the* university. His preliminary education was thoroughly classical, and after a brief period of teaching Latin and French he entered the University of Virginia Medical School. Again, in the manner of the Virginia gentleman of his period, he voluntarily interrupted his medical training to become a fighter pilot in World War I. Following postgraduate training in otolaryngology, he served on the teaching staff of the University until 1957, when he moved to Fredericksburg.

This skeleton of his life tells us something of the man, but would fit many men. My memories of him clothe this skeleton and make of it a vibrant person long to be remembered. He was a passionate Virginian: nothing gave him more pride than the fact that his father had been one of the youngest cadets from the Virginia Military Institute at New Market; he used to recall as a little boy going to a reunion of the cadets with his father. He was inordinately modest: he came in the radiology department one day to consult about a set of sinus roentgenograms with my locum tenens who had never met him; my locum tenens then proceeded to point out the various sinuses, thinking him a kindly old family doctor, never deducing that he had taught anatomy of the head and neck at the University for many years. He was gallant: he would doff his hat to girls hardly women; all the ladies in the party could count on a corsage in the colors of his beloved Episcopal High School when we would attend its football games. He loved athletics: he put me, twenty-five years his junior, out of the tennis game when I broke my foot going after the third ball he put over the net; even in his later years when he was forced to give up tennis, he would be on the golf course every chance he got; indeed, only death kept him from keeping his last golf date.

Cuthbert Tunstall will be missed.

Christian V. Cimmino, M.D.

I love my family.
I adore this house.
My in-laws are great.
The neighbors are wonderful.



Indications. [illegible] in management of anxiety and tension [illegible], alone or as accompanying symptom [illegible] to medical and surgical disorders and [illegible]. Though not a hypnotic, fosters normal [illegible] through antianxiety and related muscle [illegible] properties.

Contraindications. History of sensitivity to meprobamate.

Important Precautions. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use has been reported to result in dependence or habituation in susceptible persons, as alcoholics, ex-addicts, and other severe psychoneurotics. After prolonged excessive dosage, reduce dosage gradually to avoid possibly severe withdrawal reactions. Abrupt discontinuance of excessive doses has sometimes resulted in epileptiform seizures.

Warn patients of possible reduced alcohol tolerance, with resultant slowing of reaction time and impairment of judgment and coordination.

Reduce dose if drowsiness, ataxia or visual disturbance occurs; if persistent, patients should not operate vehicles or dangerous machinery.

Side Effects include drowsiness, usually transient, if persistent and associated with ataxia, usually responds to dose reduction; occasionally concomitant CNS stimulants (amphetamine, mephentermine sulfate) are desirable. Allergic or idiosyncratic reactions are rare, but such reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Previous history of allergy may or may not be related to incidence of reactions. Mild reactions are characterized by itchy urticarial or erythematous maculopapular rash, generalized or confined to groin. Acute nonthrombocytopenic purpura with cutaneous petechiae, ecchymoses, peripheral edema and fever have been reported. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically as with epinephrine, antihistamine and possibly hydrocortisone. Aplastic anemia (1 fatal case); thrombocytopenic purpura, agranulocytosis and hemolytic anemia have occurred rarely, almost always in presence of known toxic agents. A few cases of leukopenia, usually transient, have been reported on continuous administration.

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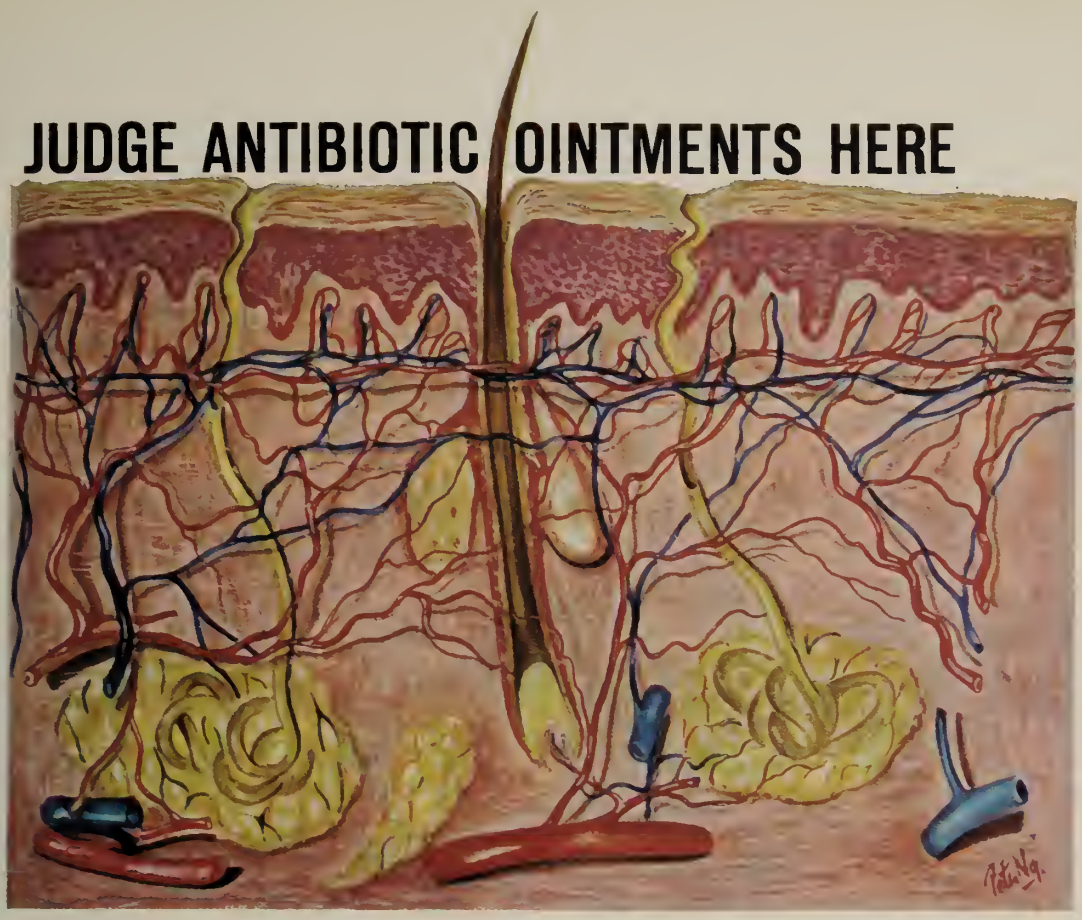
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SPLAY
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VIRGINIA MEDICAL MONTHLY

THE FRANCIS A. COUNTWAY
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BOSTON

30 OCT 1970

OCTOBER 1970

OFFICIAL PUBLICATION OF THE
MEDICAL SOCIETY OF VIRGINIA



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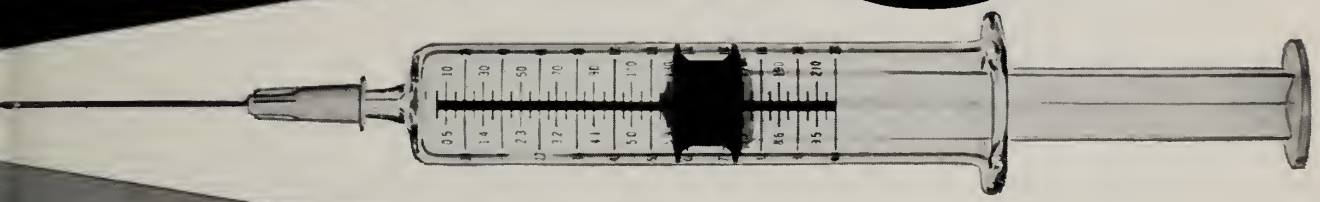
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A urinary tract infection was eliminated last week

testinal monilial overgrowth has appeared this week

For women who are diabetic or debilitated, oral antibiotic therapy often sets the stage for monilial overgrowth in the intestine.

When you anticipate such a problem, take action with DECLOSTATIN 300. It combines the broad-spectrum potency of demethylchlortetracycline with the antifungal effectiveness of nystatin—it helps avoid monilial take-over. Experience has shown DECLOSTATIN to be highly useful for many women patients; individual culture studies will show exactly where this usefulness may best be applied.

It doesn't let monilia begin where bacteria end. Declostatin® 300

Demethylchlortetracycline HCl 300 mg and Nystatin 500,000 units Capsule-Shaped Tablets Lederle

Effectiveness: Because its antibacterial component is DECLOMYCIN® Demethylchlortetracycline, DECLOSTATIN should be equally or more effective therapeutically than other tetracyclines in infections caused by tetracycline-sensitive organisms. The antifungal component, nystatin, protects against superinfection by antibiotic-resistant fungal overgrowth (particularly monilia) in the intestinal tract.

Contraindication: History of hypersensitivity to demethylchlortetracycline or nystatin.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: One tablet b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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Richmond 26, Virginia

Survival of the fittest



After 30 years most drugs are obsolete. Only a select few survive. Take, for example, Butisol Sodium® (sodium butabarbital).

The discoveries of the past few decades have revolutionized pharmacology. Not least the treatment of anxiety. Yet in the face of pyramiding changes, BUTISOL Sodium consistently remains among the 100 medications most frequently prescribed—clear evidence of physicians' continued reliance on its relaxing sedative effect.

But perhaps that should come as no surprise.

1. BUTISOL Sodium is highly predictable: minor dosage adjustments are usually all that's needed to produce the desired degree of relaxation. (With 3 dosage forms and 4 strengths to make adjustments easy.)

2. Its action is prompt, smooth, relatively noncumulative: BUTISOL Sodium begins to work within 30 minutes...yet, because of its intermediate rate of metabolism, there is generally neither a "roller-coaster" nor a "hangover" effect.

3. It is remarkably well tolerated.

4. It saves your patients money: costs less than half as much as they would pay for most commonly used sedative tranquilizers.*

It is advantages like these that lead thousands of physicians, year after year, to depend on BUTISOL Sodium for many of their clinical needs: to help the usually well-adjusted patient cope with temporary stress...or to relieve anxiety associated with hypertension, coronary disorders, premenstrual tension, surgical procedures, functional GI disorders, and the stresses of aging.

And that's a range of applications not likely to go out of date either.

*Based on surveys of average daily prescription costs.

Contraindications: Parphyria ar sensitivity to borbiturotes.

Precautions: Exercise cautian in maderote to severe hepotic diseose. Elderly or debilitated potients may react with marked excitement or depressian.

Adverse Reactions: Drowsiness at daytime sedotive dose levels, skin rashes, "hangover" and systemic disturbonces ore seldom seen.

Warning: Moy be hobit forming.

Usual Adult Dosage: For daytime sedatian, 15 mg. to 30 mg. t.i.d. or q.i.d. Far hypnasis, 50 mg. to 100 mg. Available as: Tablets, 15 mg., 30 mg., 50 mg., 100 mg.; Elixir, 30 mg. per 5 cc. (alcohal 7%). BUTICAPS® [Capsules BUTISOL Sadium (sodium butabarbital)] 15 mg., 30 mg., 50 mg., 100 mg.

the Rx that says "Relax"

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(SODIUM BUTABARBITAL)

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Gone with the wind

The gas/acid group of disorders

"The two most common complaints referable to the upper gastrointestinal tract for which patients seek medical relief are hyperacidity and 'gas.' The two often occur together."*

Frees captured gas...neutralizes free acid

SILAIN-GEL Tablets and Liquid are separate formulas designed to provide equivalent dual-action symptomatic relief. Both dosage forms contain simethicone which effectively frees trapped gas, enabling the patient to eliminate it. Magnesium hydroxide in both assures a rapid rise in pH for prompt relief of hyperacidity. The special co-dried aluminum hydroxide/magnesium carbonate gel in the tablets assures the same rapid and uniform reaction rate as the liquid. Thus, both medications achieve prompt and prolonged neutralization of free acid *plus* prompt relief from the pain and pressure of trapped gas.

Always in good taste

The pleasant, distinctive flavor of SILAIN-GEL, as well as its non-constipating feature, make it a therapy your patients can live with—in comfort and without complaint.

Select the form of SILAIN-GEL you want to provide symptomatic relief in: gastric ulcer • duodenal ulcer • heartburn • gastric hyperacidity • gastritis • dyspepsia

when the patient prefers the convenience of a tablet, select
Silain-Gel® Tablets:

when the patient prefers a liquid, select
Silain-Gel® Liquid

Also available for the patient who needs an antifrothicant/antiflatulent agent only: **Silain®** (simethicone) Tablets

*Slanger, A.: Med. Times *94*:150 (Feb.) 1966.

Announcing the "Antgasid"

Silain-Gel®

Tablets: simethicone plus aluminum hydroxide/magnesium carbonate co-dried gel and magnesium hydroxide

Liquid: simethicone plus aluminum hydroxide and magnesium hydroxide

one dose does both: frees captured gas...neutralizes free acid

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Drip stopped, Congestion cleared

For upper respiratory allergies and infections, up to 12 hours clear breathing on one tablet. Dimetapp Extentabs® does an outstanding job of helping to clear up the stuffiness, drip and congestion of colds and upper respiratory allergies and infections. Each Extentab keeps working up to 12 hours. And for most patients drowsiness or overstimulation is unlikely.

INDICATIONS: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, rhinitis, conjunctivitis, and otitis. CONTRAINDICATIONS: Hypersensitivity to antihistamines. Not recommended for use during pregnancy. PRECAUTIONS: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. SIDE EFFECTS: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered. DOSAGE: 1 Extentab morning and evening. SUPPLIED: Bottles of 100 and 500.

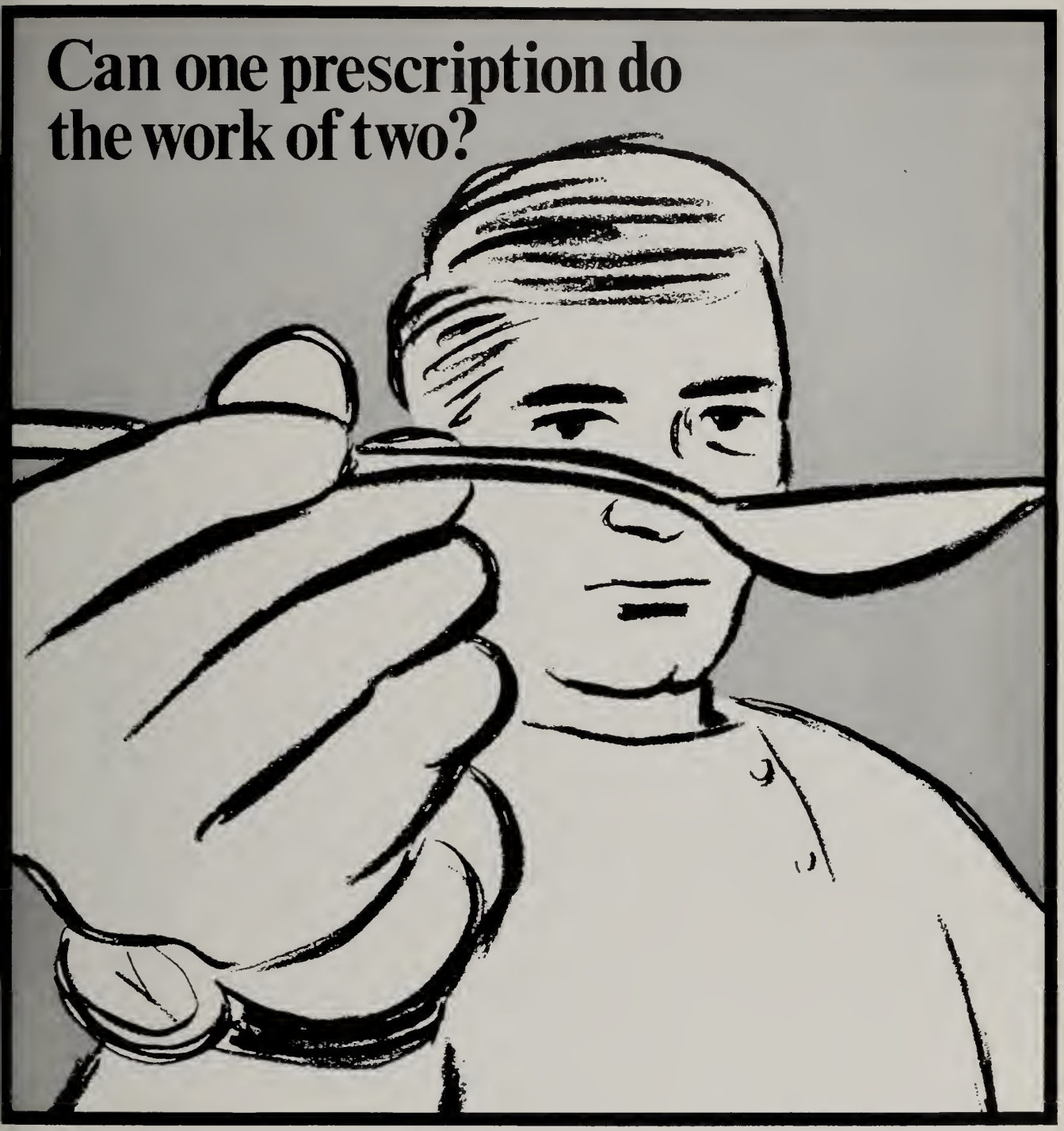
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Dimetane® (brompheniramine maleate), 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg

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Few drugs can boast a longer successful run. Introduced 17 years ago, this drug is a veteran gastrointestinal performer.

Pro-Banthine stars in the treatment of peptic ulcer, functional gastrointestinal disturbances, ulcerative colitis, hypertrophic gastritis, pylorospasm, acute and chronic pancreatitis, diverticulitis, biliary dyskinesia, hyperhidrosis, ileostomies, and colonic, ureteral or urinary bladder spasm. Its fame as an anticholinergic is worldwide.

When you want a performer you can count on . . . remember Pro-Banthine. Tradition does.

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G. D. Searle & Co., Chicago, Ill. 60680

Pro·Banthine®
(propantheline bromide)

the traditional ulcer treatment



Pro-Banthine 15 mg. propantheline bromide

Pro-Banthine 15 mg. propantheline bromide with Dartal 5 mg. thiopropazate dihydrochloride

Pro-Banthine 15 mg. propantheline bromide with Phenobarbital 15 mg. warning: may be habit forming

Pro-Banthine P.A. 30 mg. propantheline bromide in time-release form

Pro-Banthine 7½ mg. propantheline bromide Half Strength



Pro·Banthine®
(propantheline bromide)

Indications: Peptic ulcer, gastroenteritis, pylorospasm, biliary dyskinesia, functional hypermotility and irritable colon.

Contraindications: Glaucoma, severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in elderly men with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug. Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects: The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

Dosage: The maximal tolerated dosage is usually the most effective. For most adult patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthine is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Pro-Banthine® 15 mg.
(propantheline bromide)
with
Dartal® 5 mg.
(thiopropazate dihydrochloride)

Indications: Peptic ulcer, spastic constipation, nonspecific gastritis, functional gastrointestinal disorders, pylorospasm, hyperhidrosis, irritable bowel syndrome, mucous or ulcerative colitis, functional diarrhea.

Contraindications: Glaucoma, severe cardiac disease.

Warnings: Pro-Banthine with Dartal should not be administered to patients who are under the influence of barbiturates, alcohol or narcotics. The drug should be administered cautiously to epileptic patients or those in depressed states, patients with liver disease and to pregnant women. Hypersensitivity to Dartal may occur rarely in patients with known sensitivity to similar drugs.

Side Effects: Dryness of the mouth, mydriasis, hesitancy of urination; less commonly extrapyramidal (restlessness, dystonia and signs of pseudoparkinsonism such as muscular rigidity, fixed facies, tremor, ataxia, festinant gait and drooling), parasympatholytic (blurred vision, xerostomia, hypotension, nasal congestion and constipation) and curare-like (loss of control of voluntary muscles, particularly the muscles of respiration) reactions. Rarely, leukopenia or allergic purpura. A generalized erythematous skin reaction may occur. Side effects characteristic of phenothiazines such as grand mal convulsions, altered cerebrospinal proteins, cerebral edema, potentiation of the effects of atropine, heat or phosphorus insecticides, autonomic reactions, endocrine disturbances, reversed epinephrine effect, hyperpyrexia or pigmentary retinopathy may theoretically occur but have not been reported with Dartal. Severe hypotension following recommended doses occurs more commonly in patients who are also afflicted by other medical disorders such as mitral insufficiency or pheochromocytoma, and particular attention should be paid to such a possibility although this has not been observed with Dartal.

Adult Dosage: One tablet three times a day.

Pro-Banthine® 15 mg.
(propantheline bromide)
with
Phenobarbital 15 mg.
Warning: May be habit-forming.

For *Indications, Contraindications, Precautions, Side Effects* and *Dosage* see Pro-Banthine. In addition, phenobarbital should be administered with caution to patients with liver disease, mental disturbances or a significant degree of hypoxia.

Pro-Banthine P.A.®
prolonged acting brand of propantheline bromide
For *Indications, Contraindications, Precautions* and *Side Effects* see Pro-Banthine.

Dosage Form: Capsule-shaped, compression-coated, peach tablets of 30 mg. for oral use.

Dosage: The recommended initial dosage is one tablet in the morning and one at night.

084

SEARLE

Research in the service of medicine.
G. D. Searle & Co., Chicago, Ill. 60680

Menrium® treats the menopausal symptoms that bother him most.



Roche
LABORATORIES
Division of Hoffmann-La Roche Inc
Nutley, New Jersey 07110

His wife has a lot of different menopausal symptoms, but only a few really irritate *him*. Her hot flashes, her vertigo, her palpitations—that's *her* problem. What really bothers him is her nervousness, her irritability and her excessive anxiety, often expressed by endless "book-shuffling, chain-smoking, reading-lamp" insomnia!

Menrium takes care of hot flashes, vertigo, palpitations in most menopausal women. Menrium provides the well-known antianxiety action of chlordiazepoxide (Librium®) and water-soluble esterified estrogens. It therefore relieves more symptoms than either component separately. It takes care of the vasomotor symptoms as well as the emotional symptoms. This means the symptoms that bother his wife most. And the symptoms that irritate him most.

So, to help them both get through her menopause, remember Menrium.



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of manifestations generally associated with the menopausal syndrome—anxiety and tension, vasomotor complaints and hormonal deficiency states.

Contraindications: Women with cancer of breast or genitalia, except inoperable cases, and those with known hypersensitivity to chlordiazepoxide and/or esterified estrogens.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Exclude other possible causes of menopausal syndrome manifestations, such as pregnancy. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) similar to those seen with barbiturates have been reported following discontinuance of chlordiazepoxide HCl. Potential benefits of use in pregnancy, lactation or women of childbearing age should be weighed against possible hazards to mother and child. Clinical data inadequate on safety in pregnancy.

Precautions: In elderly and debilitated patients, limit dosage to smallest effective amount of chlordiazepoxide (initially 10 mg or less per day) to preclude ataxia or oversedation; increase gradually as needed and tolerated. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects—particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in patients with impaired renal or hepatic function. Paradoxical reactions to chlordiazepoxide (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in the treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation very rarely reported in patients receiving Librium® (chlordiazepoxide) and oral anticoagulants.

Adverse Reactions: Untoward effects seen with either compound alone may occur with Menrium. With chlordiazepoxide, drowsiness, ataxia and confusion reported in some patients, particularly in the elderly and debilitated; while usually avoided by proper dosage adjustment, these are occasionally observed at lower dosage ranges. Also reported have been a few instances of syncope; isolated occurrences of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido, and occasional reports of blood dyscrasias, including agranulocytosis, jaundice and hepatic dysfunction. Periodic blood counts and liver function tests advisable during protracted treatment. Changes in EEG patterns (low-voltage fast activity) observed during and after chlordiazepoxide treatment.

With estrogens, headache, nausea and vomiting, anorexia, gastrointestinal discomfort, dysuria and urinary frequency, jitteriness, breast engorgement, formation of breast cysts, skin rashes and pruritus occasionally seen. Administration may also be associated with uterine bleeding and/or followed by withdrawal bleeding.

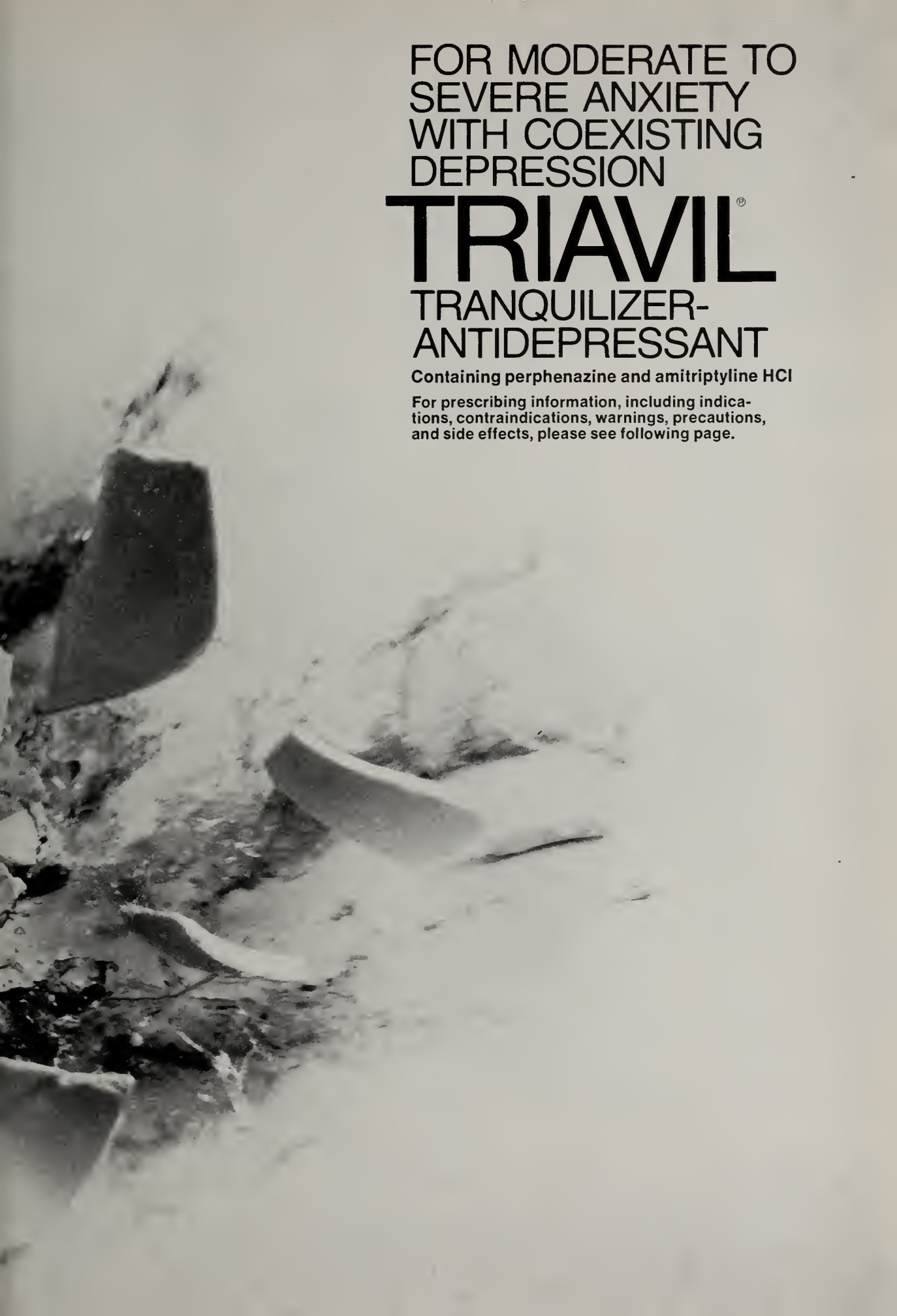
Usual Dosage: One tablet t.i.d. for 21 days, followed by one-week rest periods.

Menrium® T.I.D.

5 mg chlordiazepoxide	5-2	0.2 mg water-soluble esterified estrogens
5 mg chlordiazepoxide	5-4	0.4 mg water-soluble esterified estrogens
10 mg chlordiazepoxide	10-4	0.4 mg water-soluble esterified estrogens

BREAKUP—symbol of the impact of emotional stress. But when the stress exceeds transient rage or depression—and settles into a chronic mixed anxiety depression state—combined tranquilizer-antidepressant therapy could be indicated.





FOR MODERATE TO SEVERE ANXIETY WITH COEXISTING DEPRESSION

TRIAVIL®

TRANQUILIZER-ANTIDEPRESSANT

Containing perphenazine and amitriptyline HCl

For prescribing information, including indications, contraindications, warnings, precautions, and side effects, please see following page.

FOR MODERATE TO SEVERE ANXIETY WITH COEXISTING DEPRESSION

TRIAVIL®

TRANQUILIZER-ANTIDEPRESSANT

Containing perphenazine and amitriptyline HCl

TRIAVIL®2-10: Each tablet contains 2 mg. of perphenazine and 10 mg. of amitriptyline hydrochloride.

TRIAVIL®2-25: Each tablet contains 2 mg. of perphenazine and 25 mg. of amitriptyline hydrochloride.

TRIAVIL®4-10: Each tablet contains 4 mg. of perphenazine and 10 mg. of amitriptyline hydrochloride.

TRIAVIL®4-25: Each tablet contains 4 mg. of perphenazine and 25 mg. of amitriptyline hydrochloride.

INDICATIONS: Patients with moderate to severe anxiety and/or agitation and depressed mood; patients with depression in whom anxiety and/or agitation are severe; patients with depression and anxiety in association with chronic physical disease; schizophrenics with associated depressive symptoms.

CONTRAINDICATIONS: Central nervous system depression from drugs (barbiturates, alcohol, narcotics, analgesics, antihistamines); bone marrow depression; pregnancy; and in patients with known hypersensitivity to phenothiazines or amitriptyline. Do not give in combination with MAOI drugs because of possible potentiation that may even cause death. Allow at least two weeks between therapies. In such patients therapy with TRIAVIL should be initiated cautiously, with gradual increase in the dosage required to obtain a satisfactory response. Do not give concomitantly with guanethidine or similarly acting compounds since it may block the antihypertensive effect.

WARNINGS: Patients should be warned against driving a car or operating machinery or apparatus requiring alert attention, and that response to alcohol may be increased.

PRECAUTIONS: Suicide is always a possibility in mental depression and may remain until significant remission occurs. Supervise patients closely in case they may require hospitalization or concomitant electroshock therapy. Untoward reactions have been reported after the combined use of antidepressant agents having various modes of activity. Accordingly, consider possibility of potentiation in combined use of antidepressants. Use with caution in patients with glaucoma and those with problems of urinary retention. Perphenazine can lower the convulsive threshold in susceptible individuals. It should be given with caution to patients with convulsive disorders. Dosage of the anticonvulsive agent may have to be increased. Not recommended for use in children. Mania or hypomania may be precipitated in manic-depressives (perphenazine in TRIAVIL seems to reduce likelihood of this effect). If hypotension develops, epinephrine should not be employed, as its action is blocked and partially reversed by perphenazine. Caution patients about errors of judgment due to change in mood.

ADVERSE REACTIONS: Similar to those reported with either constituent alone.

Perphenazine: Should not be used indiscriminately. Use caution in patients who have previously exhibited severe reactions to other phenothiazines. Likelihood of untoward actions greater with high doses. Closely supervise with any dosage. Side effects may be any of those reported with phenothiazine drugs: extrapyramidal symptoms (opisthotonos, oculogyric crisis, hyperreflexia, dystonia, akathisia, dyskinesia, parkinsonism) usually controlled by the concomitant use of effective antiparkinsonian drugs and/or by reduction in dosage, but sometimes persist after discontinuation of the phenothiazine; skin disorders (photosensitivity, itching, erythema, urticaria, eczema, up to exfoliative dermatitis); other allergic reactions (asthma, laryngeal edema, angioneurotic edema, anaphylactoid reactions); peripheral edema; reversed epinephrine effect; hyperglycemia; endocrine disturbances (lactation, galactorrhea, disturbances of menstrual cycle); altered cerebrospinal fluid proteins; paradoxical excitement; EKG abnormalities (quinidine-like effect); reactivation of psychotic processes; catatonic-like states; autonomic reactions, such as dryness of the mouth, headache, nausea, vomiting, constipation, obstipation, urinary frequency, blurred vision, nasal congestion, and a change in the pulse rate; hypnotic effects; pigmentary retinopathy; corneal and lenticular pigmentation; occasional lassitude; muscle weakness; mild insomnia. Other adverse reactions reported with various phenothiazine compounds, but not with perphenazine, include blood dyscrasias (pancytopenia, thrombocytopenic purpura, leukopenia, agranulocytosis, eosinophilia); liver damage (jaundice, biliary stasis); grand mal convulsions; cerebral edema; polyphagia; photophobia; skin pigmentation; and failure of ejaculation. Significant unexplained rise in body temperature may suggest intolerance to perphenazine, in which case discontinue. Antiemetic effect may obscure signs of toxicity due to overdosage of other drugs or make diagnosis of other disorders such as brain tumors or intestinal obstruction difficult. May potentiate the action of central nervous system depressants (opiates, analgesics, antihistamines, barbiturates, alcohol) and atropine. In concurrent therapy with any of these, TRIAVIL should be given in reduced dosage. May also potentiate the action of heat and phosphorous insecticides.

Amitriptyline: Careful observation of all patients recommended. Side effects include drowsiness (may occur within the first few days of therapy); dizziness; nausea; excitement; hypertension; fainting; fine tremor; jitteriness; weakness; headache; heartburn; anorexia; increased perspiration; incoordination; impotence; increased appetite and weight gain; allergic-type reactions manifested by skin rash, swelling of face and tongue, itching; numbness and tingling of limbs, including peripheral neuropathy; activation of latent schizophrenia (however, the perphenazine content may prevent this reaction in some cases); epileptiform seizures; temporary confusion, disturbed concentration, or transient visual hallucinations on high doses; evidence of anticholinergic activity, such as tachycardia, dryness of mouth, stomatitis, blurring of vision, reversible dilatation of the urinary tract, urinary retention, constipation, paralytic ileus; agranulocytosis; jaundice. Elderly patients and adolescents can often be managed on lower dosage levels.

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Guest Editorial . . .

Health and the Environment

MAN, like the fish swimming placidly in its bowl, has been amazingly oblivious of his environment. Man has also given little thought to his own unbridled reproductive powers rapidly producing too many children for the environment to support properly. It is only relatively recently that environmental pollution has become so obvious to the senses that it could no longer be ignored. And only in quite recent years has population increased so fast that numbers of nations have developed population policies.

Suddenly there is popular awareness that these problems will not "go away" or solve themselves. The politician now finds that he can "get votes" by being a "pollutician" as an editorial in the *Richmond Times-Dispatch* calls him. He can even safely challenge vested interests that have contributed to pollution.

It has been pointed out that some very hard decisions must be made in many of the problems of environmental protection. For example, it has been pointed out that:

> "We have not yet devised means to assess the rate of exchange; the necessity to feed growing numbers of people against the measurable depletion of the soil; . . . the civil liberties of the people who want large families against the demands of population control; the elimination of crop insects and malaria against the preservation of fish." *

Physicians must brief themselves scientifically to speak with authority on these environmental and population questions that so engage popular attention. As a good citizen with training in biology and chemistry, the physician is in a position to arm himself with facts so that he can help provide sensible leadership as his community considers proposals to improve the situation. As a beginning, it is suggested that the doctor take a few minutes to go through some of the periodicals in his own waiting

*Schrag, Peter, "Who Owns the Environment?" *Saturday Review* p. 6 et seq. July 4, 1970.

room to discover what his patients may be reading while waiting to see him!

Doctors skilled in epidemiology have, from the beginning of medical science, been concerned with "Airs, Waters and Places" as was Hippocrates. Epidemiology is basically a matter of studying the interaction of the host, the disease agent and the *environment*. The "bad air" which gave mal-aria its name is a classic example of the pathogenic effects of environment. Years before Pasteur converted the germ *theory* into fact, sanitarians such as Edwin Chadwick in England and Lemuel Shattuck in New England (about 125 years ago) concluded empirically that their filthy environment had a strong connection with the then prevalent communicable disease epidemics. Fortunately, the health programs they designed to control filth worked very well indeed, paying huge dividends. The "pay-off" was so great that today the public health man is often accused of creating the population explosion that has triggered the cries for environmental protection.

Let us put aside for the moment the matter of overpopulation of the social environment, as this is a very big problem, and concern ourselves with physical, chemical and other pollutants. For generations a major part of the public health program has been environmental control through proper disposal of sewage; production and distribution of safe water, milk, seafood and other foods; as well as the control of industrial hazards, housing and of all types of accidents. Control of air pollution and of radiological hazards came more recently.

Work in these and related aspects of environmental health led to development of the engineering specialty of sanitary engineering or public health engineering. The United States is internationally known as the first producer of such engineers. Trained sanitarians also do essential jobs in controlling environmental hazards, as do public health veterinarians who cope with animal-borne diseases transmissible to man—the Zoonoses.

The triad of engineering, education and enforcement together comprises the elements of the control programs which have been developed. A great deal of good work is also being done in making the producer a partner in the whole process of environmental control, and in making him realize that it is good business to have a safe, "clean place".

When people began thinking seriously about the environment it is not surprising that it was found to have a great many facets. In an editorial the *New York Times** noted that some 84 different Federal agencies had important environmental concerns, with emphasis on either control

*Editorial, *New York Times*, July 12, 1970.

or exploitation or both. The *Times* commented that this duality of interests frequently produced conflict, citing the concept that:

> "No agency entrusted with promoting the development of an area's natural resources—minerals, seafood, water power—should be entrusted at the same time with protecting the environment against the consequences of that development."

It is to be noted that health agencies are concerned with control and not with exploitation as well, so that they are not burdened by the conflict cited by the *Times*.

President Nixon has proposed a reorganization plan to establish a brand new Environmental Protection Agency which would take over functions that "old-line agencies" have "largely failed to perform because of their concentration on stimulating production or aiding particular groups in the population." Similar patterns of reorganization are taking shape in numbers of States.

There is much that is good in the President's proposal; new agencies have often provided momentum to priority programs. But one is reminded of a not dissimilar proposal made by the First Hoover Commission in 1948-9. More than 65 Federal administrative units were found to be directly concerned with health activities (comparable to the 84 recently found concerned with environmental problems). A United Medical Administration to bring together under one head the dispersed health activities recommended by the Hoover Commission was never formed.

Members of the health professions, whether in private practice or employed by government, have a great stake in the responsibilities assigned to health with environmental protection. The question to be answered may be stated briefly as:

> "What should be the responsibilities of the health agencies in environmental protection?"

There is no single prescription which will cover all situations, but some general concepts may be kept in mind when reorganizations are being considered, at whatever level of government:

1. When the effects of a particular type of environmental pollution have important health implications, the agency which is primarily concerned with health should come directly into the picture, giving advice and consultation about possible control measures.

Whether or not the agency primarily concerned with health should have major responsibility for implementation of a particular control pro-

gram that is to be undertaken depends upon judgment as to which agency may be best qualified to administer that program.

Such judgment should be made by a governmental authority which is equipped to have a perspective of the overall broad environmental situation, and which has in mind the difficulties and dangers faced by any implementing agency which has both exploitation and enforcement responsibilities in a particular area or field.

2. When an agency is currently doing a job effectively, it is better not to disturb the existing situation.

It is certain that many aspects of environmental protection have very important health implications. It is also certain that the health agencies, by and large, have been quite successful in carrying out their environmental responsibilities when they have received the necessary funds. The team of engineers and physicians, together with sanitarians, nurses, laboratory workers, health educators, statisticians and so on, is a highly useful team that should not be fragmented.

3. When many diverse interests are involved and there is need to reconcile differences in order that problems may be solved, then an administrative structure which ensures representation—such as a commission or a committee of department heads—may accomplish more than a single executive might be able to do.

4. One responsible agency with a single top executive can move more rapidly than could a commission when there is a well-developed technology ready for application, and when the problem of diverse interests is not too great.

5. Environmental protection must be an important element of comprehensive health planning, otherwise the word "comprehensive" in the sense of being inclusive, is hardly applicable.

These considerations should be kept in the forefront of thinking as reorganization of governmental approaches to environmental protection are being worked out.

It would be sad indeed if the health agencies were to be stripped of administrative responsibility for tasks which they are now doing with diligence and efficiency. And it would be even sadder if the health point of view were to be lost in planning and implementing measures to protect the environment.

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When to Discontinue Oral Contraceptives

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There are certain conditions which contraindicate the continued use of oral estrogen-progestin contraceptives. These conditions are enumerated and discussed.

ORAL CONTRACEPTIVES which contain estrogens and progestins have gained wide acceptance. The physician's problem has changed from "Should I ever prescribe oral contraceptives?" to "should the oral contraceptives be discontinued in this patient who has a particular medical condition?" This presentation will discuss various indications for ending oral contraceptive therapy.

An increase in the Vitamin K dependent clotting factors (prothrombin and factors VII, IX, and X), as well as an increase in platelet count and fibrinogen level has been found in most, but not all, studies of women taking oral contraceptives. Some of the conflicting results in the blood coagulation studies can be explained by the fact that different data were obtained when plastic tubes were used for storage instead of glass tubes. In any event, such changes do not necessarily indicate clinical hypercoagulability.[1]

Several recent reports from Great Britain have shown a relationship between the use of oral contraceptives and thromboembolic diseases, including deep vein thrombosis and pulmonary embolism.[2,3] These studies were matched case-control studies and were based on the concept of comparing known instances of thromboembolic disease with matched women, and determining the usage of oral contraceptives in each group. This has been an acceptable statistical technique and the results of these studies indicate that users of oral contraceptives were over eight times more likely to experience deep vein thrombosis and pulmonary embolism. Such data does not necessarily indicate a cause-and-effect relationship. In disagreement with the foregoing is an article by Drill and Calhoun, which compares the incidence of thrombophlebitis in young women using oral contraceptives with non-pregnant women of childbearing age.[4] The report is based on a very large number of users of oral contraceptives in the United States and was compiled from data from a number of different investigators at different institutions using different protocols. No evidence of an increased incidence of thrombophlebitis in users of oral contraceptives was found. Thus, when different approaches were applied to the same problem, different conclusions were reached. Among the causes for disagreement was the fact that the American study included superficial thrombophlebitis (a much more common condition), whereas the British study included only deep vein thrombosis and pulmonary embolism. In any event, the occurrence of superficial thrombophlebitis, deep vein thrombophlebitis, or pulmonary embolism should be an indication to discontinue oral contraceptive therapy.

Several cases of thrombotic occlusion of the superior mesenteric artery have been reported in females over 29 years of age who

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were taking oral contraceptives.[5] Unexplained acute abdominal pain in such women is an indication to discontinue oral contraceptives.

In 1967, Woods described six patients in whom hypertension may have been intensified by oral contraceptives.[6] These cases came to his attention without a special search and caused him to consider the possibility that oral contraceptives may intensify pre-existing hypertension and may precipitate hypertension in certain patients. Published during the same month was an article from Columbia University in which a relationship was established between the institution of oral contraceptive therapy and the development or enhancement of high blood pressure in eight of eleven patients.[7] Marked improvement of the hypertension occurred in 75% of these women when the oral contraceptive was discontinued, and in two patients the hypertension returned with a second course of therapy.

Dr. Kunin and others of Charlottesville conducted a statistical study of blood pressures in users and non-users of oral contraceptives.[8] Initially, they found a slight elevation of blood pressure in users of these agents but after one year found no significant change in mean systolic blood pressure. This study was important in that it confirmed the observation that the vast majority of women do not have their blood pressure affected by oral contraceptives. On the other hand, there are a few women in whom this does occur, and, in this latter group, oral contraceptives should be discontinued and some other form of contraception employed.

Retrospective statistical analyses of young patients with cerebral vascular occlusions have not solved the question of whether a significant difference exists in the incidence of such occlusions in users and non-users of oral contraceptives. It has been recommended that oral contraceptives be given with caution to patients with hypertension, a history of recurrent vascular headaches, or other non-migrainous vasospastic or occlusive arterial disease. Present evidence does not indicate that the frequency of such predisposing conditions is greater in the group of stroke patients who had received oral contraceptives than in a control group of young stroke patients who had not received the medication. However, any patient who develops even transient neurologic symptoms, particularly those corresponding to the area of distribution of a cerebral artery, should discontinue the medication.[9]

There may be some difference between the type of stroke syndrome seen in women receiving oral contraceptives and other people. Twenty-six per cent of a group of young women who developed strokes while using contraceptives manifested clinical evidence of occlusion in the vertebro-basilar system. Posterior circulation occlusions are infrequent in the general population, and there is a high frequency of such occlusions in users of oral contraceptives.[10]

The symptom complex of migraine can vary considerably. It can range from transient sensory phenomena without headache through the unilateral headache preceded by sensory aura and followed by nausea, vomiting, and prostration, to the forms of complicated migraine including ophthalmoplegic migraine with hemianopsia. A relatively large percentage of women who have suffered cerebral vascular accidents while using oral contraceptives have had an antecedent history of migraine. This would result in the recommendation that oral contraceptive therapy be discontinued in any patient in whom migraine appears, increases, or qualitatively changes for the worse after the institution of therapy.[9]

Oral contraceptives cause a predictable reversible reduction in hepatic excretory function in all subjects when appropriately tested. Jaundice occurs in those patients with inherited or acquired reduction in hepatic excretory function when they are exposed to oral contraceptives. Impairment

of hepatic function is produced fairly frequently by oral contraceptives, but in healthy women it is clinically insignificant. The oral contraceptives are contra-indicated in women with recurrent cholestasis of pregnancy or benign familial recurrent cholestasis, constitutional hyperbilirubinemia, and chronic liver disease such as cirrhosis or hepatitis.[11]

It should be remembered that 2.5 percent of patients randomly selected from the population will have some abnormality in liver function tests.[12] All alterations in liver function studies do not in themselves constitute indications for stopping oral contraceptives. Nevertheless, when jaundice occurs or when there is the presence of fever, rash, pruritis, arthralgia, or dark urine suggesting anicteric jaundice, the oral contraceptive should be discontinued. When this is done, the hepatic signs and symptoms should regress.

There is not sufficient evidence to support the contention that oral contraceptives can protect against the development of carcinoma of the cervix, and conversely, there is little to suggest that they are carcinogenic. A study of the prevalence of carcinoma in situ of the cervix among women attending Planned Parenthood Centers in New York City was reported in the British Medical Journal in July, 1969.[12] This showed a decreased prevalence rate in women choosing and using diaphrams as compared with those choosing and using oral contraceptives, even after data was corrected for such things as age, ethnic group, age at first pregnancy, and so on. It should be pointed out that in this study, pretherapy cervical Papanicolaou smears were not made. The comparison was made only between women using diaphrams and those using oral contraceptives, and data from women using intrauterine devices or rhythm for contraception were not included. Data from these latter cases would be necessary to demonstrate any carcinogenic effect of the oral contraceptives. It is possible that the diaphragm or condom exerts a protective influence against cervical carcinoma. Certain investigators have found reduced instances of cervical carcinoma in women using these methods as compared to those using no contraception, although this has not always been found. Supporting the concept of a "protective influence" are the observations that smegma is carcinogenic in susceptible mice, there is an increased rate of cervical carcinoma in prostitutes, and there is virtually no cervical carcinoma in nuns or lesbians.[13]

Taylor et al. have described a distinctive type of atypical polypoid endocervical hyperplasia in women taking oral progestins, usually for purposes of contraception.[14] These lesions appeared clinically to be a cervical polyp, a cervical erosion, or a hyperplastic area in the endocervical canal. Microscopically, they reflected the gross impression of a polyp and were lined by cells ranging from flattened to cuboidal, as opposed to the columnar cells usually seen in endocervical glands. Mitotic figures were exceedingly rare or absent, and inflammation with a plasma cell infiltrate was commonly seen. These authors felt that there might be a relationship between the lower dosages of progestins in the causation of such lesions and felt it was possible that the hyperplasia represented a modification of the normal changes in the endocervical glands from co-existing infection. In a study done at Fort Belvoir, Virginia, less cervical reaction was seen in women receiving sequential agents as compared to those receiving combination agents.[15] As women received the agents for greater periods of time, the cervical reactions seemed to be greater. It is important to recognize that such hyperplasia exists, and that it is not adenocarcinoma.

Uterine leiomyomata have been observed to increase in size while women were taking oral contraceptives. This has usually been noted to occur when patients were receiving this medication for a prolonged time, as for a pseudopregnancy, and only rarely has

occurred when low dosage was taken in a cyclic manner.[16] The natural history of this condition is gradual growth until menopause, but discontinuing oral contraceptives may enable a woman to avoid having a hysterectomy.

There is little to indicate that oral contraceptives may cause breast carcinoma. There is, however, a well known long waiting period between the exposure to a carcinogen in the manifestation of a malignancy. Much concern has existed over possible neoplastic changes in breast tissue during exposure to exogenous hormones. This has probably been based on the relatively high frequency of breast cancer in certain strains of mice receiving exogenous estrogens.[16] However, since estrogens are known to have a stimulating effect upon certain breast carcinomas, the presence or development of breast cancer would be an indication for stopping oral contraceptive therapy.

Melasma similar to the chloasma of pregnancy has been described as an oral contraceptive effect. Women with olive complexions are most frequently affected. Exposure to ultra-violet radiation and possibly Vitamin B complex deficiencies may be implicated.[17] If melasma appears, the oral contraceptive should be discontinued for cosmetic purposes. The regression of this hyperpigmentation may be prolonged, even longer than the usual regression time for chloasma of pregnancy.

In the presence of cardiovascular-renal disease, epilepsy, or asthma, fluid accumulation which sometimes occurs secondary to sodium retention associated with steroid therapy must be considered and may occasionally be an indication for discontinuing oral contraceptive agents.[12]

Although many psychotic women have had improvement in their symptoms while taking oral contraceptives, in other women a severe depression has occurred while using oral contraceptives.[18] When such depression does occur, the medication should be discontinued.

Estrogen-progestin oral agents are perhaps the best contraceptive method currently available for routine use. However, certain women with various medical conditions should not take these drugs, and should use other forms of contraception.

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The National Heart and Lung Institute (NHLI)

Has announced its intent to establish, on a competitive basis, a limited number of specialized research centers devoted to the solution of specific problems identified by the Institute as of high priority, and in one of the following disease areas: Arteriosclerosis, Thrombosis, Pulmonary Disease, and Hypertension. The objective of the Program is to focus resources, facilities and manpower on particular problems and to expedite the development and application of new knowledge essential for improved diagnosis, treatment, and prevention of these diseases.

The support mechanism for the Centers will be the grant-in-aid, but it will differ from other research grants both in its goal orientation and in the degree of participation by the National Heart and Lung Institute. In this sense, the award of a Center grant will connote a special relationship between the NHLI and the grantee institution.

The deadline for receipt of applications is January 1, 1971, and applicants may expect to be advised of the action on their proposals about June 1971.

Copies of a detailed Program Announcement describing the NHLI Specialized Centers of Research, may be obtained by writing to Dr. Jerome G. Green, Associate Director for Extramural Research and Training, National Heart and Lung Institute, Bethesda, Maryland 20014.

Respiratory Care in a Community Hospital

CHARLES F. BALLOU, M.D.
Clifton Forge, Virginia

The treatment of acute and chronic respiratory disease is a rapidly expanding field.

RESPIRATORY DISEASE and its treatment both acute and chronic has increased in scope and complexity many times in the past 10 to 15 years. Because of standardization of pulmonary nomenclature on an international basis in the 1950's, and because of the current development of cardiac and cardiopulmonary surgical techniques, diseases of the chest are nowadays treated daily in more and more institutions, using techniques and measurements which were considered research procedures as early as 10 years ago.

In evaluating in our hospital the number of admissions needing nebulization for chronic lung disease on both medical and surgical services, under any and all situations, since 1965, we find a total of 350 in 1965, not counting the first three months of the year. In 1966 there were 442, in 1967, 470, and in 1968 approximately 700 patients. In 1969 our projected figures are however 1,000 patients. These patients range from those with a history of chronic productive cough with subjective or objective wheezes and rhonchi found on routine, or pre-surgical exam, to those moribund and comatose in acute respiratory failure. Adding to these the trauma of crushed chest injuries being seen in automobile, railroad, and other industrial accidents, the work of respiratory therapy shows no end and for that matter only steady progression.

As one whose sub-specialty is respiratory diseases, it has been our emphatic stand that no elective surgery should be done on any patient with chronic lung disease or, for that matter, a history of heavy smoking for many years, until three to five days of intensive pulmonary therapy have been carried out by our newly trained respiratory nurse and her team of therapists, with vigorous continuation of treatment after surgery as long as need be. The lack of postoperative pulmonary complications in the past five to six years has been our reward, as have many patients on the medical service who have been able to return to the better and more comfortable lives, and in some cases to steady employment.

In order to evaluate or treat any disease one must first have measurements. This in chronic lung disease, especially in its acute phase, is most important as disastrous errors in treatment and clinical judgment in these patients can be avoided, if time is taken to evaluate them more closely. We cannot emphasize the importance of repeated blood gas studies, many times throughout the day if necessary, as regards to these measurements. Clinical bedside evaluation of the patient, a nurse in full time attendance who is trained to handle and evaluate changes on the spirometer on the PR-2 ventilator are all of the greatest importance. In the chronic patient periodic evaluation of his timed vital capacity, maximum breathing capacity, and mid-expiratory flow rates, and blood gasses preferably in a chest clinic is considered most desirable. Very often the progressively decompensating patient who has not subjectively noted his progressive

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decompensation can be discovered early and therapy instituted before it is too late. We have attempted to initiate a chest clinic held every Wednesday afternoon consisting of ourselves, a nurse respiratory therapist, and the group of therapists she has trained to do this type of evaluation. At this time an FEV-1 is done as a basic study, along with blood gasses if necessary, as well as a general clinical appraisal. In time we intend to initiate classes in breathing exercises, held weekly if necessary, for the more seriously ill patient, or those who are in a stage of early evaluation and treatment.

One can well imagine however, that the over-all problem in the chronic pulmonary cripple, or the person with the acute respiratory decompensation, is the fact that he is unable to maintain a normal pO2 on one hand and, as the situation becomes worse, to keep an abnormal pCO2 from building up on the other. In the acute patient, therefore, there is a need for a rapid and integrated effort to ventilate the patient before acute hypoxia and/or poisoning from the elevated carbon dioxide sets in irreversibly. If the patient is unconscious or stuporous, an endotrachial tube may be inserted. A tracheostomy may be done 24 to 48 hours later with a cuffed tracheostomy, if prolonged ventilation is going to be needed. With this arrangement a patient may then be placed on a patient cycled, or machine cycled breathing by intermittent positive pressure breathing apparatus or one of the newer volume controlled respirators, depending on the patient's respiratory drive, lung compliance, and measurements such as tidal volume, blood gasses, etc. In some cases we have used a small Wright Respirometer, which can be placed temporarily in series with the tube going from the IPP machine to the endotracheal or tracheostomy tube where the true minute volume and tidal volumes can be measured. We have generally found that 700 cc or more per respiratory cycle in the tidal volume is necessary for the acutely ill patient, but each patient has to be titrated according to his own needs. Here, of course, is where the blood gasses come into the picture strongly. Oxygen is a drug, and, like other drugs, can be helpful or dangerous when given too fast or too slow, too much or too little. Constant monitoring of the patient's blood gasses is needed. This is correlated with the amount of pressure and tidal volume in the IPP machine, the total minute volume, and the amount of oxygen which can be bled into the system in a speed to ensure the maintenance of an adequate pO2. All have to be measured and monitored constantly. Needless to say the pCO2 is monitored at the same time as the PO2 and generally, but not always, we have found that when adequate oxygenation is maintained the pCO2 tends to take care of itself in these cases, the hypoxia taking the first priority in the order of abnormal physiology which needs correction. Indeed, in a comatose patient, too rapid a ventilation with a fast reduction of the carbon dioxide and a reduction of the hydrogen ion in the face of large stores of bicarbonate, which the patient has accumulated over a long period of time to over-compensate for his elevated CO2, can cause convulsions and sudden death, another reason for the monitoring of the blood gasses on this type of patient.

Additional measures in these patients, of course, are antibiotics and suction every hour. The nurse uses sterile gloves and mask with each suctioning, and a new sterile catheter, making sure that modern measures of tracheostomy care are adhered to. This includes deflating the tracheostomy cuff every hour to prevent ischemia of the trachea itself, along with the adequate suction mentioned above. Caution must be taken during suction not to let the catheter remain in the trachea in the upper tracheobronchial tree longer than 10 seconds. This is of course facilitated by having a Y-tube with suction applied only when the thumb is on the open end of the Y. The catheter, once placed low in the tracheo-bronchial tree can be slowly withdrawn with the suc-

tion applied. The up and down motion of the catheter with the suction full on as seen in old times is definitely out of the picture, this leading only to trachial erosion and further infection complicating an already hazardous picture.

During this time of course, intraveneous aminophylline and adequate intravenous hydration, digitalization as necessary and constant nursing care, as mentioned before, are all items of importance. We again emphasize the necessity of having trained personnel on hand at all times whenever a ventilator is in constant use. The slipping off from the endo-tracheal tube or tracheostomy of the attachments of the ventilator, or a sudden malfunction of the ventilator without a nurse in attendance can end in tragedy within a moments time, and cannot be emphasized too strongly here.

One item which has come into focus in recent years is the need for cleaning the tubing from each IPP machine daily, as dangerous cross infections have been shown to occur very quickly if this is not done. Our chronic patients in our general ward population are on the standard Ohio Handi-Vent nebulizer. These machines are changed daily by a group of technicians who bring sterile units in plastic bags and replace these while taking away the contaminated units for sterilization that day.

The use of breathing exercises, chest percussion and vibration for postoperative and chronically ill patients with chronic respiratory disease, and the continued interest which must be shown in them at all times is a long story in itself and cannot be gone into here. Needless to say mental depression in these people is quite prevalent and we have learned about this the hard way by one attempted suicide, and one who actually went home and shot himself after being discharged from the hospital in a relatively asymptomatic condition. Retrospectively we should have picked this up and I think it is important for every person who takes care of these chronically ill people to be aware of its constant danger.

In summary we have tried to show the ever increasing challenge of chronic respiratory disease and how it is being met in a 200 bed general hospital located in a rural area. In the time allowed we have skimmed rather lightly over the problem, but the problem is certainly no light one, and we are hard at work on it at all times.

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Ambulatory Pediatrics a Community Effort

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The entire community must be involved in providing comprehensive pediatric care.

IT SHOULD BE NO SURPRISE to anyone that the use of health facilities for ambulatory services is on the increase. Various factors contribute to the rise in the general utilization of health care resources: increase in the absolute numbers of people, growing awareness of the benefit to be derived by seeking modern medical attention, and the increase in the ability of people—aided by new legislation and increased fringe benefits for employees and dependents—to seek health care.

In addition to these general factors, there are many others—some positive and some negative—which have led to an increase in the number of outpatient hospital visits. Of course, not all outpatient facilities have shown the same increase or an increase at all. Such factors affecting the use of hospital outpatient resources include: emergence of Medicare and Medicaid; growth in number of persons covered by voluntary health insurance; increase in the coverage provided by such insurance; changes in the policies of Blue Cross to pay for outpatient procedures (rather than to insist on payment only for inpatients); the decline in the number of general practitioners; the decrease in the proportion of physicians engaged as private practioners; the referral practices of physicians; the increase in the complexity of laboratory and other ancillary services; and the shift in the composition of those living in cities. In addition, the steeply risng costs of hospital inpatient care may have been affecting the utilization of outpatient facilities.[1]

Increased visits, and the recognition that care must be adequate if it is to be altogether meaningful, have led to an augmented interest in examining what goes on during outpatient visits. This renewed and sometimes new interest in outpatient affairs results in part from a need for administrative type information and in part from a desire to know what has been done for patients so that patient care may be improved—in efficacy, efficiency or adequacy. This term given to one method of studying the care that takes place in hospital outpatient departments is "Medical Audit".

To bring this closer home—Drs. Booker and Vansant presented the Norfolk General Hospital Emergency Room problem in July 1969 Virginia Medical Monthly.

In Charlottesville we have been conducting surveys of patients needs, desires and satisfaction with facilities for the past two years both general patients and pediatric patients.

My studies show that one out of every three patients seen after hours has a private physician.

Dr. McCormick's studies showed one-half of the patients showing up in the Emergency Room were not urgent but having non-acute or minor disorders.

Nearly half of the non-urgent emergency room population had yearly incomes of less than $3,000. Only 20 per cent had incomes of more than $5,000 a year. Nearly 45 per cent of the non-urgent population were

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non-white. Age distribution peaked in the 0-9 and 20-29 age groups.

More than 75 percent said they had a family physician but, of these, 71.2 per cent said he was unavailable at the time of the "emergency". More than half of the persons surveyed said they would not have gone to their local doctor had he been available. All felt their doctors did their best but that the emergency room was better equipped to handle their problems.

Almost all the patients, many of whom had traveled long distances to reach the emergency room, felt there should be a clinic in their county.

The researcher's findings indicated an increased rural dependence on the city hospital by the indigent who found good quality medical care on a 24-hour, seven-days-a-week basis. For others, the emergency room was a reliable place to go when they could not contact their family doctor.

"This study reflects what is happening all over the country," said Dr. McCormick. "More and more people are using the emergency room as their "first-line" source of medical care since they are unable to find either well-equipped medical facilities or physicians readily available and close to them.

"This trend should be reversed," she added. "Emergency Rooms are not set up for continuity of care. Persons with non-urgent problems must be redirected back to their local doctors.

"More doctors must be educated and encouraged to work in rural areas if this need is to be filled. Different incentives, perhaps subsidies, could be experimented with," said Dr. McCormick.

Pediatricians recognized this trend of patient care from the hospital wards to the doctors office or outpatient clinics soon after World War II. The discovery of antibiotics for control of infections was one major factor in starting this trend. Improved x-ray equipment and techniques along with automation of laboratory procedures and analysis developed during the war also had their influence. The spiraling costs of hospitalizations due to many factors was the final impetus that made ambulatory care a reality.

Every doctor's office cannot hope to offer the desired laboratory support that he would like to furnish. The demands for special testing such as speech and hearing, early visual evaluation along with psychometrics as well as medical subspecialties makes comprehensive care no longer possible or practical in one office. This is not the result of over specialization but rather the demand for more medical evaluation and counseling in depth.

How we endeavor to satisfy these demands by the patient both private and indigent becomes a cooperative effort. In the cities the medical schools and teaching hospitals are an accepted and many times expected service. They act as the family doctor for a large segment of the population and depending on many factors are either adequate or wanting.

What about the doctor in the rural areas and the small communities? How are they to deliver the medical care that they would like to provide and that they feel their patients deserve? Also who is to look out for the rural indigent? These are factors that usually receive little or no attention in the major health programs or planning.

The local health departments furnish many services such as well baby clinics, family planning conferences, special crippled children's bureau consultation for congenital heart, plastic surgery, cystic fibrosis, orthopedics, hearing defects, neurosurgery, etc. In addition, they provide certain specialized laboratory testing. Nursing care support and home followup visits are also furnished.

The community hospital emergency room usually is designed to handle both medical and surgical emergencies. These facilities along with the personnel assigned were not intended to provided diagnostic clinic serv-

ices. In many metropolitan areas they have become night clinics. In the smaller communities they are rapidly becoming the family doctor.

It soon becomes apparent that the needs of the patients are not being adequately met by our present methods for delivery of services. Many attempts for a solution have been made by each group involved with varying degrees of success.

The United Mine Workers Regional Hospital and the Kaiser Permanente Group are examples of industry and union plans to furnish health care to their members. Both of these plans have a degree of success and have broken ground for perhaps future planning along the lines of regional health centers.

Group practice, very popular on the west coast and mid-west, has been an attempt by the medical profession to provide better care to the patient at the same time easing the pressure for the physician by sharing coverage. Many of these groups provide x-ray, EKG, laboratory both biological and chemical along with consultation service to their patients. These groups are either accepted by the private patient or are critized as big business and too impersonal. They also in many instances, have been business oriented and therefore are of little value to the lower middle classes and indigent patients.

A recent attempt by some community hospitals to provide full time emergency room coverage with a screening or triage physician has much merit. Many large industrial plants have a similar facility for first aid treatment and referral to either a contract physician or the family doctor.

With so many different approaches to provided medical care being used, it becomes immediately apparent that there is no single answer. It should become obvious that what provides for the needs of one community would be inadequate for another, that the private patient does not easily adapt to regimentation involved in clinic like settings; the medically indigent no longer deserves or accepts second rate care, and the government has been taking steps to see that they are not neglected. There should be no second rate citizens as far as medical care is concerned.

What we do as physicians to provide facilities and make available complete and adequate comprehensive health care must be individualized. The needs of each community, differs as to population size, ethnic groups, medical facilities available and the annual economy.

The pediatric patient is an ideal model on which to build such planning for the community medical needs. He is totally dependent on some adult for care. He is subject to frequent illnesses and accidents. Most of his needs are easily provided for, and he responds readily to treatment. He is the target for much preventive health care. He is the subject for interminable studies and testing. He is a captive audience since his life is so regulated by lack of mobility when young and regimentation of schooling as he gets older. He is an indicator of the family health patterns. He may be the key to family planning, familial diseases, public health needs and community support.

As pediatricians we recognize these advantages that the child offers—but being busy caring for them we frequently fail to communicate with our fellow townsmen. We need to involve the health series of our health departments. We must become aggressive in our making readily available laboratory facilities. We should make better use of our existing programs such as school health for case finding and health education. The children are learning the new math, why not personal hygiene, accident prevention and dental care.

We should make use of our available teaching aids such as television, movie strips, and pamphlets. The drug salesman gives you pens, lights, samples, etc. Why not use their salesmanship on our children for better health. This way the parents will also be-

come exposed to what we think is good medical practice and health needs.

By teaching the children and offering them what we consider good health habits we can expect to reap the benefits in future generations. A few minutes extra during office visits for accident prevention.

As to danger of overdose of drugs, proper foods and feeding habits, personal cleanliness and hygiene are only a few suggestions as a starting point. Active participation in the P.T.A. and such school programs with support of the school lunch programs and encouraging parent participation is another approach.

Finally the community should be made aware of its needs for providing adequate medical care for its citizens. The physicians can help by giving of their time and experience when called on by the community leaders. There may be needs for health clinics, community hospitals, clinical laboratories, and others depending on the circumstances. We as physicians and pediatricians particularly should be vitally interested in providing our services to satisfy the needs of our patients.

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Let's Reminisce!

To Remove Wrinkles.

Quite a sensation has recently been made in Boston by the successful application of wool-fat, or agnine, to the skin, for the removal of wrinkles. When applied with rubbing, it passes directly through the skin and acts as a nutrient to the fatty tissues beneath. An ancient dame has succeeded in removing nearly all the crows-feet from around her temples, and the remedy is fast becoming very popular.—*Med. and Surg. Rep.—Med. Fortnightly, Sept. 18* (Reprinted from the Virginia Medical Monthly, October 1893).

Visitation of U. S. Physicians to Overseas Areas

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The shortage of medical manpower is acute in many parts of the world. By sending physicians to these needy areas, the United States can help the cause of world peace.

THE TASK of discussing U. S. physicians overseas in ten minutes is practically an impossible one. Just to list the multiple agencies that send U. S. physicians overseas would take most of the time. There are today literally thousands of U. S. physicians serving overseas on short or long terms, under government or military contract, under volunteer agencies sponsorship or under religious auspices.

Should the health conditions of the world outside of the boundaries of the United States be included in this panel on the comprehensive health care in the United States? Is the U. S. physician overseas part of the U. S. health picture, or is he on "vacation" from responsibilities to his own community?

The medical profession, more than anyone else, understands or should understand the inter-dependency we as human beings have one on the other. Our responsibility towards the suffering cannot be limited by political boundaries. Our concern for those outside of our community is a debt we owe to all societies and all communities since it has been from them that we have received so much of our knowledge and skills. Today more than ever in the history of man the health of the world is the health of our society, our own community, our own family. Viruses, bacteria, protozoa and fungi have no nationality. They are neither capitalist nor communist. With the rapid transportation we have today, the masses of U. S. citizens traveling to all parts of the world, the so-called exotic tropical diseases we once only encountered in the course of parasitology in medical school very likely can now be the next case that walks into your office.

Involvement in the world with people in their needs is no longer a concern of just a few. No longer the monopoly of colonial powers or mission enterprise but now of eminent concern and importance to all if we are to survive in this world. With modern communication we no longer can hide in our backyard nor can we keep from being seen and heard by all, even in the remotest part of the primitive areas of the world. Telstar has put our backyard with all our goodies, and with all our dirty linen, into the living rooms of the world.

Perhaps the first question to ask would be what motivates these physicians to be involved in world suffering? What really justifies the sending of these men and women overseas?

The Expansion of His Horizon

We all have some of the Huckleberry Finn in us. We all plan some day to climb that mountain that separates our valley from our neighbor's. We all yearn to see just beyond our own horizon. Our ego is challenged by these unknowns.

But can we really live in isolation? Is our own county boundary to be the limit of our interest? If so, how do we keep from atrophying?

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Though Americans basically are isolationists, can we really be so today? What we have gathered from all parts of the world we owe to all parts of the world.

If we are to survive we must combat the spirit of isolationism in ourselves, our profession and our country.

Thus not only must the spirit of adventure be fulfilled, we are to be fulfilled by it. We owe to the world the demonstration that we are world minded, world involved and world responsible. We physicians more than any other have the capacity and ability to be of service to ourselves and the world in this way.

The expansion of man's horizon, the looking over into our neighbor's valley, is part of the justification, part of the motivation for this venture.

Flag Waving

From all our political and international leaders there continues to come the warning that we must either find a way to live together in this world or face extinction as a human race. This, they warn us, is an urgent desperate need. As never before we must find ways of communicating to the world the best we have, we must show the world that we are concerned for those beyond our borders. Dean Rusk speaking to the Conference on International Health in Chicago last May said, "We are in a race between man's capacity to be reasonable on one side and the passion for which he can destroy himself on the other." In the same speech he told us that we, the medical profession, are the best ambassadors that the U. S. has overseas. While our diplomats are rocked and spit upon, U. S. visiting physicians are welcomed. When all Americans, government, AID, etc., were asked to leave Yemen, southwest Arabia, our medical missionaries were asked to stay and are still there. When a U. S. physician with his skill and knowledge and, more, his genuine concern for the suffering, speaking the international language of pain and health, goes to a country he does more for world peace at the grassroots than many diplomatic missions, hundreds of magazine and newspaper articles, thousands if not millions of AID dollars.

He comes not just to gawk, not just to picture and to pity (a form of contempt), but to show true compassion and concern. This is understood, appreciated; this is true United States diplomacy.

A Desire to Help

One of the noblest attributes of man is his unselfish desire to help his fellow man. This, it seems, in our society today is becoming more and more difficult to express for the physician. We hesitate to stop at a wreck on the highway since it may involve us in a lawsuit. We have difficulty rendering charity service since the government is now paying for all medical attention and there are no more "charity" cases.

But this desire to be involved in human need still persists in us. It is this desire that has motivated many U. S. physicians to go overseas.

The Eternity of Man

For the medical missionary and others there is still another motivating factor that I feel I must mention. Perhaps this can best be described as the interest and concern for the totality of man's being, his physical, his mental, his sociological, and his eternal. For the missionary this is fundamental. The missionary, medical or otherwise, is a bearer of a message, and the message is of God's love and concern for each individual. This love must not only be preached but must be shown, and thus the medical missionary is the ideal person to do just this. His concern is not just for "winning of converts", his concern is total. His interest is not just for the pathology that he might see in the outpatient department or inpatient wards of our mission hospitals (of which there is an abundance) but his true concern, interest and love is for the individual. This

opportunity to show God's love to those in need of this love is what drives a medical missionary and others to an overseas involvement and is what keeps many of them there, year after year.

But is there really a need for these men and women to leave their busy practices in the United States, their relative comfort and safety, their gracious living to which most of us are wired, and to go into the utmost parts of the world carrying the gospel of modern medicine and help?

A glance at some of the world health statistics will quickly show the desperate health situations in many parts of the world.

Today, in this day of organ transplants, electronic marvels and miracle drugs there are still. . . .

400 million cases of trachoma
10-12 million cases of leprosy
50-60 million cases of malaria
15 million cases of tuberculosis (with over three million deaths annually from this disease.)
Two hundred million cases of schistosomiasis

Smallpox, cholera, yellow fever and filariasis still abound in many areas of the world. Add to this the everyday medical needs and emergencies that a community has.

The nutritional problem in many parts of the world is a desperate one. It is reported that nearly all children in rural and poor areas of Central America suffer growth retardation and other evidence of protein malnutrition. Kwashiorkor, the protein deficiency disease, is all too evident in many parts of Africa, Latin America and the Orient. Overlying all this is the extremely serious situation of the population explosion. It is estimated by the United Nations that by the year 2000 there will be 7.4 billion inhabitants of the world. Of this tremendous increase, 85% will be in precisely the areas of food deficiency. This can only result in wholesale famines, world wide hunger marches, revolutions and universal war where the starving will be fighting to get food from the affluent.

As we consider these facts remember that we now have in our hands the tools for prevention or cure of most of these evils. We have medication that will cure or prevent tuberculosis, trachoma, schistosomiasis, malaria, etc. We have proven that measles, poliomyelitis, diphtheria, and other diseases can be wiped out. We have the knowledge to prevent malnutrition and we now can prevent fertilization in 99% of cases so desiring it.

Why then cannot these remedies, these drugs and methods, be applied to meet these desperate needs? The lacking ingredient is manpower—skilled, trained manpower. There is still a great lack of medical skills in many of these countries. The Orient reports that there is one physician for 7,000 population. Nigeria has only one physician for 10,000 population. The little country of Yemen in southwest Arabia has only one physician for 65,000 population. The missing factor again is manpower. We in the United States, blessed beyond all nations, have the potential manpower to deliver health, but more than this to teach how health can be delivered to the world.

The motivation for the involvement of U. S. physicians in world need is clear. The need for the U. S. physician in world health is apparent. The method of involvement of the U. S. physician is multiple. We, the U. S. medical profession, hold a powerful tool for world peace. Let us use it in world concern and involvement before it is too late and there is no one on the planet to be concerned, or to be concerned for.

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Role of the State Department of Health in Comprehensive Health Care

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Both the State Department of Health and the private physician have a role in bringing comprehensive health care to all members of the community.

INASMUCH AS I AM THE LEAD-OFF MAN in this discussion, perhaps we should start with a definition of "comprehensive health care". One which I found was made in the December, 1968, report to the President by the National Advisory Commission on Health Facilities. The Commission defined comprehensive health care as "a system of services, for individuals and families, including four essential components; health education; personal preventive services; diagnostic and therapeutic services; and rehabilitative and restorative services."

In all probability, any one of you can come up with a different and perhaps better definition. My personal opinion is that this one does not reflect the proper regard for the role of man's environment. But whatever the definition, the key word is "comprehensive", for which the definition is relatively simple: "covering completely; inclusive."

Comprehensive health care is a new concept for our nation, given impetus by recent Federal legislation. It represents a shift from an emphasis on disease to an emphasis on health. It recognizes that the ultimate in good health is more than an absence of disease but, rather, a sense of physical, mental, and emotional well-being.

Up to comparatively recent times, the physician devoted his entire career to ministering to the sick and rightly so, for through the centuries that has been his major task. It was the only means he knew to combat ill health. This type of physician will be long remembered for the very considerable contribution he made to the health of the people, but, as with so many aspects of our world, he has become out-dated.

The modern-day doctor practices on a more scientific basis, as opposed to a reliance on the art of medicine in the past. Research has provided him with a vast knowledge of disease, with new and better facilities, equipment, techniques, and methods, plus the miracle drugs. The modern doctor spends as much time in keeping his patient well as in ministering to his illnesses.

As research and experience have brought to light more knowledge of health maintenance, disease prevention, and rehabilitation, the public has become more sophisticated in its role of consumer; today the public expects to benefit from this knowledge without undue delay. The public regards *disease* with matter-of-fact impatience as a condition ranging from a nuisance to an outright tragedy; *health* is regarded as a state ranging from a demonstrable economy to a civic right.

This change in concept affects both you in your private practice and me in public

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health. You are now spending more time on the preventive aspects of medicine, which used to be my field entirely; I am spending more time on the delivery of health care, which used to be your prerogative entirely! To meet the challenge of comprehensive health care, however, all elements of care must be combined and coordinated, and this will require the personal involvement of you as a private physician and me as a public health physician.

My very good friend and distinguished colleague, Dr. Herman Hilleboe, former Commissioner of Health in New York State, said in an article published in 1959, and I quote:

"People who make an avocation of squeezing various human endeavors into tight little compartments and labeling them for all eternity said in effect, 'Public health physicians are supposed to prevent illness and private practitioners are supposed to cure it.' This neat ruling has long since been reduced to its rightful absurdity by a common-sense recognition that both preventing and ameliorating disease and disability is the business of everyone in medicine. This observation would not be worth making were it not for the further observation that the ghost of competition that it conjures up is still getting in the way today. For what is emerging is the general recognition that a class partnership between public health physicians and private practitioners is vital to the welfare of the people in every community. The old argument still prevents a few physicians from recognizing that public health activities do not compete with the private practitioner. Indeed, the truth of the matter is quite the opposite. Each year, thousands upon thousands of patients, who otherwise would not have done so, stream into the offices of private physicians, because they were sent or influenced to go there by public health workers." That was written in 1959, but it is still valid today. As a matter of fact, it will become even more so, as we in public health are now administering funds that pay for many of those patient visits.

In my position I give high priority to close working relationships with the private physicians; if it were not so, I would not be here today. If we are going to achieve comprehensive health care for the population, you must give a high priority to working with public health.

Public health is an arm of medicine and a specialized branch; some of us are even recognized Board members. Very generally speaking, it is our function to carry out those services or procedures that are important to the public's health that the private practitioners would be unable to do, or would be unable to do as well. Over the years, we have played an important part in the over-all health of the people and still do.

In the early days of development, public health work was considered to be a temporary measure, not to be undertaken except in the face of an epidemic. However, the communicable diseases were the foremost health problems of the day and epidemics were rampant, so our work was never temporary. The private practitioners had come to realize that there were problems they could not solve without assistance, so we went into a cooperative venture with them to lick these problems—and I might say with considerable success.

Malaria is a good example. Malaria used to be an important disease in the United States and still is in the world; it used to be one of the chief causes of morbidity and even mortality. But without the help of organized public health, the practicing physicians would have had a very hard time in controlling this disease. In this instance it took a combined effort to get the job done, the effort of M.D.'s entomologists, sanitary engineers, and sanitarians. The latter three are members of the public health team and are not ordinarily found on the staff of the hospital, a clinic, or in the office of the private practitioner. In this instance, public

health had the people with the know-how to get the job done.

The same might be said for typhoid fever, dysentery, and all the filth-borne diseases. Tuberculosis posed a special problem, as it was infectious and a hazard to all citizens; VD was another special problem of epidemiology, control and treatment. Both required the team approach.

As vaccines were developed, we in public health cooperated with you in bringing them immediately to the general public through mass vaccination clinics. Today, smallpox, whooping cough, diphtheria, and poliomyelitis have almost disappeared from the community scene. More recently the attack has been on measles. The German measles vaccine released this year will make a great contribution to the health of mankind by preventing many birth defects of hearing, speech, eye, heart, and mental retardation.

Now, let's talk specifically about the Virginia Department of Health.

As you perhaps know, the State Board of Health was created in Virginia in 1872 and the Department of Health, per se, headed by a Commissioner of Health, was established in 1908. Ever since then Virginians have been receiving some public health services. These can be classified in two categories: (1) services to all the people; and (2) services limited to the needy.

Services for *all* the people have included those for protection of man against the hazards of the environment. We have been responsible for drinking water purity, sewage and waste disposal; food, milk, and shellfish sanitation; radiation protection; accident prevention; health education; tourist establishment sanitation; and medical facilities construction and licensure.

For *all* the people there have also been some special health services for the epidemiology and control of communicable diseases, selected diagnostic laboratory tests, a system of maintaining vital records and health statistics; and certain other services, such as tuberculosis diagnosis and control treatment which are not usually available from the private sector. Hill-Burton facilities construction is another activity which benefits the state's population as a whole. Of the above, the control of communicable diseases, tuberculosis control, and vital statistics have been active public health programs since the beginning of the State Board of Health in 1872.

Historically, the *needy* have received all of the above-listed services, plus some direct care for categorical conditions or diseases, but these direct services were a little later in development. In 1918 the State made its first appropriation for the treatment of orthopedic conditions in children; funds for school health examinations were made available in 1920; and a Division of Mouth Hygiene, to provide dental services for needy children, was established in 1921. Venereal disease work began in 1918 during World War I. The passage of the Social Security Act in 1935 brought the first matching Federal funds for the Crippled Children's and Maternal and Child Health Programs, and sparked the movement to categorical medical care services for the needy.

Today the Health Department has active programs of care for low income maternity patients, premature infants, sick infants, well babies, and preschool children. Crippled Children's services span the whole range of crippling conditions, from orthopedic, plastic, burn and pediatric surgery and neurosurgery, to urology, facial deformities, rheumatic fever, congenital heart defects, seizure control, defective hearing, eye muscle imbalance, cystic fibrosis, and mental retardation.

Hospitalization is paid for complicated pregnancies, premature and sick infants, for all conditions covered by the Crippled Children's Program, and for the diagnosis of cancer. About two thousand private practicing physicians work in the local health department clinics and are the backbone of all of these medical care programs.

Historically, then, we have been providing a considerable amount of preventive and protective service for *all* the people and some specialized care for the *needy*.

The 1965 amendments to the Social Security Act, which included Medicare and Medicaid, brought about a mighty thrust forward to the concept of good health care as a basic right for all citizens, with care for the needy supported by the tax dollar. It was through Medicaid that the Health Department became responsible for the health care of that group of citizens defined as needy.

So, here we are with that complete turn of events which fate so often brings. In the early days, we used to apologize for taking part in therapeutics. Care of the tuberculous patient was rationalized by placing the sanatoria directly under the Board of Health, which then was composed entirely of physicians. With venereal disease, the excuse was chemical quarantine. Now we are taking on the administration of programs of medical care for the poor because we appear to be the logical agency to do the job. As far back as 1934, the AMA in a 10-point statement endorsed the proposal that the poor should have the same medical care as anybody else and that the only logical way to get the job done was through the tax dollar.

Today it is obvious that the old methods of looking after the poor, such as passing the hat, donations to voluntary agencies, and pure charity, are no longer getting the job done. Today it takes a broad tax base support, such as you have in Medicaid, to cover the health needs of the indigent. And when you support a program with tax funds, government enters in the role of administrator.

To return to comprehensive health care, in simple language this means the best for everybody, regardless of ability to pay. On the basis of my previous remarks, I hope you now have a complete understanding of the fact that the phrase, "regardless of ability to pay", is what brings the Virginia Department of Health into the picture.

What can we do together to achieve comprehensive health care for the citizens of Virginia?

First of all, you the physicians are the only persons who can provide the medical care which is fundamental to the system. Without you there would be no system. But, in cooperation with public health, the system can be rounded out. We in public health can increase your effectiveness in a number of ways. Certainly, we can look at the environment. We can insure minimum standards in health facilities. And we can team up with you in immediately bringing to the public at large the benefits of new medical discoveries.

We can supplement patient care services by providing home health nursing, physical therapy, and nursing follow-up for your mental, geriatric, and other patients. And, especially in rural areas where physicians are at a premium and in the core areas of the cities where the magnitude of the problem is almost overwhelming, we can bring about more effective utilization of your time by providing the clinic setting, complete with nursing and clerical assistance.

It is in this field of actual medical care that we come aground, usually through that old argument of competition. It seems to me, however, that competition should not enter the picture where the treatment of the poor is concerned. Today medical care for this segment of the population is being paid for by the tax dollar—your tax dollar and mine. It behooves us both that this money be spent in the most economic and efficient way possible. As an arm of government, we in official public health agencies are involved in the administration of the tax dollar; as an arm of medicine, we can effectively cooperate with you to insure quality of care.

If the present partnership between the

(*Continued on page 658*)

Evidence of a Prehistoric Physician in Virginia

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The interesting "instruments" of this early medicine man were found with his skeleton.

IT IS A RARE EVENT when the archeologist can designate, with a reasonable degree of certainty, the tribal function or "profession" of a prehistoric American Indian by analysis of burial artifacts found with the skeleton. Such was the case of one skeleton found in the excavation of the Shannon Site, 44 My 8, in April, 1966. The site was located on a cultivated bench on the east side of the Roanoke River (North Fork) about 4 miles east of Blacksburg, Virginia, on county route 723.

During the summer of 1966, one hundred human skeletons were exhumed and detailed studies were made on physical anthropology and osteo pathology. These Indians had occupied the site about 450 ± 50 years ago, living there about two generations or 50 years. Life expectancy in this group was about 27 years.

The fourth skeleton encountered was that of a male, about 65 years of age as determined by cranial suture fusion and dental attrition. Two mandibular incisors and one canine stub remained and had caused erosion and resorption of the opposing maxillary bone. He had been buried in the southern quadrant of the village in a shallow, oval pit in an area where graves were numerous. Discovery of the grave was made when the distal phalanx of his big toe appeared during the cleaning of the ground surface with a small trowel.

His burial position was supine with the legs tightly flexed against the chest; head and shoulders were somewhat lower than the feet which were barely covered by the grave pit fill. In the course of excavation, topsoil which had accumulated since the village was abandoned was stripped away and, in Fig. 1, you see the skeleton, in situ, with



Fig. 1. Skeleton of Indian shaman with cache of artifacts in situ.

grave pit dimensions exactly as produced by the Indians. Most of the graves excavated were of this shallow type which indicates the indolent attitude of these Indians when forced to dig in the hard clay soil or a hasty expediency for disposal of the dead, or both.

The exciting array of artifacts found on the thorax of the skeleton has led to interesting conjecture. We have found the shaman or "medicine man", depending upon which term one chooses to use. In Fig. 1,

two turtle shell cups can be seen, the cup adjacent to the mandible covering a cache of artifacts. All items were removed, cleaned and restored and in Fig. 2, we see the instruments required for the practice of "medicine" in sixteenth century Virginia. One must compare these instruments with those of modern medicine in postulating their use



Fig. 2. Restored items in the "medical" kit. See text for individual descriptions.

in a primitive society. As you will see, only a few of the artifacts are analogous to historic instruments. With this idea in mind, the following assumptions are made.

Item A is a bone awl made from the tibiotarsus of a wild turkey and item B is an awl made from a deer humerus. These tools were used commonly for punching holes in leather, sewing and lacing but they would work equally well as lancets and probes. Item C is a molar tooth of the American Elk with a shallow groove carved around the root tips. This tooth was probably tied to a string and used as a totem or amulet. Incidentally, elk were destroyed in eastern North America in the early colonial period and are common now only in areas of the mountainous West.

Item D is a bone tube cut from the shaft of a mammal leg bone. It may have had a wooden insert to produce a bone whistle or it may have been a single bone bead used as an amulet. Item E is the bony core of the talon of a golden eagle and item F is the lateral digital bone of a white-tailed deer. Again, both of these may have been used as totems or amulets. Item G is a rose-colored, quartz crystal and item H is a stream-tumbled, cobble stone which has some anthropomorphic configuration. These were probably used for "magic" in the medical kit and the cobble may represent a fertility symbol. Item I is a small, black, chert scraper with refaced cutting edge made from a spall; here is his scapel. Items J are three, fresh water unionid clam shells that may have been used as mixing bowls for concoctions or as totems. Items K are two turtle shell cups made from the common box terrapin, showing much usage by the internal scratchings and wear. These too may have held medicinal concoctions. Item L is the single artifact that identifies its owner as a shaman: a medicine smoke tube made from the shaft of a polished, human humerus. With this item, the "doctor" could blow tobacco smoke, or smoke from the 32 other types of plants smoked by the American Indian, on the afflicted part of the patient. This was a standard "treatment" applied to diseased teeth, one of the major medical problems of these people. Tubes of this type are still in use in primitive societies in Africa and South America.

From this cache of material we have no evidence of the herbs used for medicinal purposes by these people. The majority of the items appear to have been associated with the superstitious use of amulets and totems to exorcise "demons" and "evil spirits". We have ample evidence from the studies on 100 skeletons from this site that syphilis, skeletal tuberculosis, rickets, osteoarthritis, osteogenic sarcomas, osteomas, osteoporosis, tori auditivi, mastoid abscesses, projectile trauma, broken bones, congenital deformity and all of the complications arising from dental caries and abscessed teeth were common afflictions in this society. Thus, the shaman had both variety of diseases and quantity of patients just for the "treatment" of osteogenic disorders.

The skeleton of this Indian has been deposited in the Bureau of American Ethnology, Smithsonian Institution, Washington, D. C., and the artifacts have been retained by the Archeological Society of Virginia for future deposition in the State museum.

Gratitude is expressed to Carlton A. Michael, M.D., Blacksburg, for his assistance in the field and in the laboratory.

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Squamous Cell Carcinoma in Sinus Tract of Chronic Osteomyelitis

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A case report of squamous cell carcinoma arising in a sinus tract of chronic osteomyelitis. The case is reported for all intents and purposes to alert the physician to be aware of a severe and often fatal complication of longstanding chronic osteomyelitis.

THIS WAS A 58 YEAR OLD WHITE MALE who sustained a gunshot wound in the left leg in World War II. He developed chronic osteomyelitis of the left tibia with drainage and was hospitalized on many occasions in different private and Government hospitals. Since then, the patient has been advised on several occasions to submit himself to surgery, but he refused, and therefore has been treated locally and intermittently with antibiotics.

On last admission, 11/15/67, to VAH, Hampton, patient complained of severe pain in the upper part of the left leg radiating to the foot, and a foul smelling bloody discharge from the sinus tract on the upper third of his left leg.

Physical examination on admission—A 58 year old well developed and well nourished white male in no acute distress. His station and gait were impaired due to osteomyelitic deformity. TPR normal. BP 110/70. Extremities showed a large and very deep ulceration at the anterior aspect of the upper end of left leg over the tibia, part of this ulcer was granulation tissue and part was bony tissue. The surrounding tissue was indurated and greyish in color (Fig. 1). The



Fig. 1. Large and deep sinus tract with indurated edges. In the depth the bone can be seen.

left knee was partially ankylosed. There was a moderate degree of muscular atrophy of left calf and thigh.

X-ray findings (Fig. 2)—Left knee observed from 1961 to 1967 showed residuals of a reunited fracture through the tibial epiphysis which extended into the knee joint and was probably comminuted. Extensive cavities remained in the anterolateral aspect of the tibial proximal metaphysis and the irregular bone structure reached the skin in an area below the tibial tuberosity. Comparing views of 1961 and 1967, the area of

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bone cavitation had gradually reduced a few millimeters by post inflammatory bone apposition. The knee joint had developed progressive ankylosis during these five years and had become synostotic.



Fig. 2. X-ray of tibia and knee joint.

Other systems—No abnormalities detected. Patient was allergic to penicillin, erythromycin and declomycin.

Laboratory studies—Otherwise not contributory. Cultures from sinus tract grew aerobactor aerogenes.

On 1/19/68 he had undergone AK amputation of his left leg. The leg was examined by the pathologist who described it as follows: Just below the patella anteriorly there is a hollow deformity over the skin measuring 6 cm. in greatest diameter and 2 cm. in depth, the surrounding skin is grey, necrotic and foul smelling. The bone which can be seen through the hole is friable. Representative sections of the skin and bone were embedded.

Microscopic examination—(A) The skin which shows areas of ulceration is lined by stratified squamous epithelium with hyperkeratosis and acanthosis. In the underlying dermis there is a dense inflammatory infiltrate in which nests strands and sheets of neoplastic squamous cells showing dyskeratosis, horny pearls, inverted nuclear cytoplasmic ratio, large nuclei and prominent nucleoli. Mitotic figures are frequent. The neoplastic cells penetrate deep into the fat and muscular layers with foci of necrosis. Occasional lymphatic spaces filled with neoplastic cell were seen (Fig. 3).

(B) Sections of the bone show large areas of necrosis in an inflammatory infiltrate. Large areas of the bone were replaced by neoplastic elements of squamous cells which were well differentiated; bacterial colonies were also seen within the necrotic material (Fig. 4).

The diagnosis of squamous cell carcinoma with invasion in a osteomyelitic sinus tract was made.

Patient had inguinal lymphadenopathy and four days after surgery on 2/6/68 inguinal lymph node biopsy was performed and five lymph nodes were removed. Histological examination revealed three out of the five to be completely replaced by neoplastic elements of well differentiated squamous cell carcinoma (Fig. 5).

Patient's course in hospital went slowly downhill. He developed multiple ulcerations of the stump extending upwards to the left inguinal region and left lower abdomen. Cultures from the ulcerations and sinuses of the stump and inguinum grew hemolytic staphylococcus, coagulase positive, proteus vulgaris and pseudomonas. Patient expired 8/12/68.

Autopsy revealed—Massive necrosis and hemorrhage of the skin with multiple sinus tracts in the stump extending into the groin and left lower quadrant of abdomen. Massive metastases were found to the retroperitoneal mesenteric, para-aortic lymph nodes,

adrenals, spleen, iliac bone, serosal surface of urinary bladder, pelvic peritoneum left side, pleura and skin of abdominal wall.

The immediate cause of death was a bronchopneumonia.

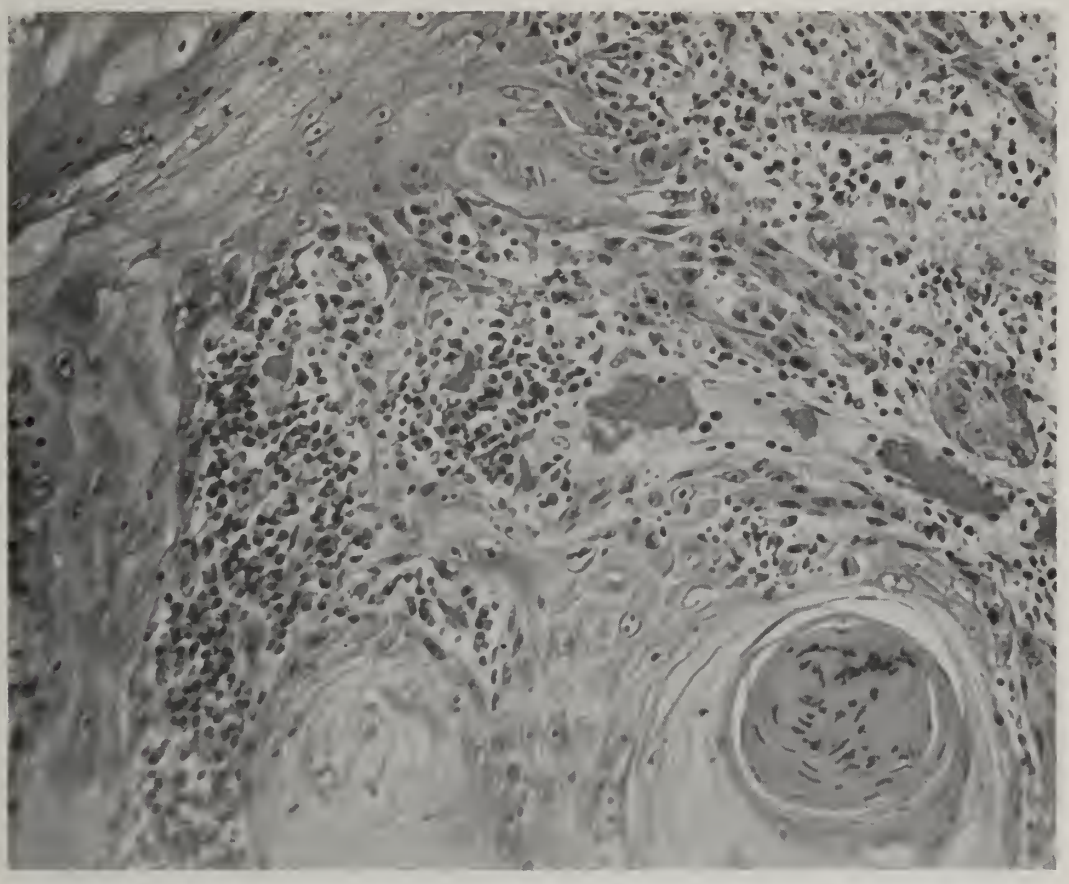


Fig. 3. The skin from sinus tract, showing the well differentiated squamous cell carcinoma with dense inflammatory infiltrate. (H and E x 200)

Discussion

One hundred and twelve cases of squamous cell carcinoma arising in sinus tracts of chronic osteomyelitis were reported up to 1966. Of these only in 14.4% was there histological evidence of distant metastases.

Squamous cell carcinoma is a rare complication of chronic osteomyelitis. Epithelial proliferation is frequent in sinus tracts of chronic osteomyelitis, and in some cases the proliferative hyperplasia of the epithelium is very florid as it is designated pseudoepitheliomatous hyperplasia. These changes may be advanced to a state where both clinically and histologically they simulate a malignant lesion.

Sinus tracts with squamous cell carcinoma in chronic osteomyelitis occur most commonly when the tibia is involved, next in frequency is the femur. There are cases reported in which the carcinoma occurred in chronically draining sinuses from the calcaneus, metatarsals and metacarpals.

The onset of neoplastic changes has occurred as early as 18 months and as late as 64 years after the onset of the osteomyelitis.

The ages of the patients are usually between 40 and 70 years of age when malignancy occurs.

The original lesions are usually open fractures, but cases of carcinoma have been reported in sinuses of hematogenous osteomyelitis and in one patient with tuberculous osteomyelitis.

The signs and symptoms of epidermoid carcinoma in osteomyelitic sinus tracts are:

(1) Increase in the discharge.
(2) Foul odor from the lesion.
(3) Increased pain.
(4) Bleeding.
(5) Presence of a mass.
(6) Difficulty or inability to walk.

liomatous hyperplasia, but carcinoma may be present with minimal bone destruction and with no visible soft tissue mass.

The most rewarding diagnostic procedure is a biopsy obtained from multiple sites, including tissue from the depth of the sinus.

Very often it is difficult to classify the epithelial proliferation in sinus tracts of



Fig. 4. Necrosis and inflammation of bone. The figure S at the corner is a bacterial colony. (H and E x 55)

Unfortunately, carcinomatous changes are rarely considered by the physician since the above mentioned signs and symptoms are related to the infection and epidermoid carcinoma is a rare complication of chronic osteomyelitis.

Roentgenographic changes must be interpreted with great caution since they do not necessarily indicate the presence of carcinoma. Extensive bone destruction may be present in chronic osteomyelitis with epithechronic osteomyelitis whether it is benign or malignant. Lanny, Johnson, and R. L. Kempson[1] divided the histological changes into three groups: (1) Benign, (2) Atypical cell epitheliomatous hyperplasia, (3) Epidermoid carcinoma.

The benign group represents most cases of squamous cell hyperplasia without invasion of the underlying tissue, atypical cells or abnormal mitosis. In some cases this hyperplasia may be sufficient to be termed

pseudoepitheliomatous, but there is neither invasion of the underlying tissue nor formation of a soft tissue mass.

The second group is designated to atypical pseudoepitheliomatous hyperplasia, because the sheets of squamous cells are invading the underlying tissue and even the bone. The masses of the proliferating squamous cells and fibrous stroma may form a soft tissue mass; however, the individual cells usually show no atypical features and there is no evidence of lymphatic or vascular invasion, abnormal mitosis are not seen. This group of cases cause great difficulty in determining clinically or on histologic grounds whether the changes are benign or malignant unless metastases are present; therefore errors in diagnosis are frequent.

The third group, squamous cell carcinoma is made histologically when there are abnormal mitoses, dyskeratotic cells, lymphatic or vascular invasion; metastases in this group should be expected. Therefore, regional lymph nodes should be biopsied at time of biopsy of the sinus tract.

Lanny, Johnson, Kempson[1] and others believe that patients with atypical pseudoepitheliomatous hyperplasia should be treated by amputation for the following reasons:

1. In some instances an epidermoid carcinoma will be missed because the tumor is so well differentiated that a definite histological diagnosis of carcinoma cannot be made.

2. Almost all patients with this form of hyperplasia will have extensive bony destruction and a non-functional limb.

Epidermoid carcinoma in chronic osteomyelitis should be treated with amputation at an adequate level for malignant lesions with regional lymph node biopsy at the same time. Inadequate local excision or inade-

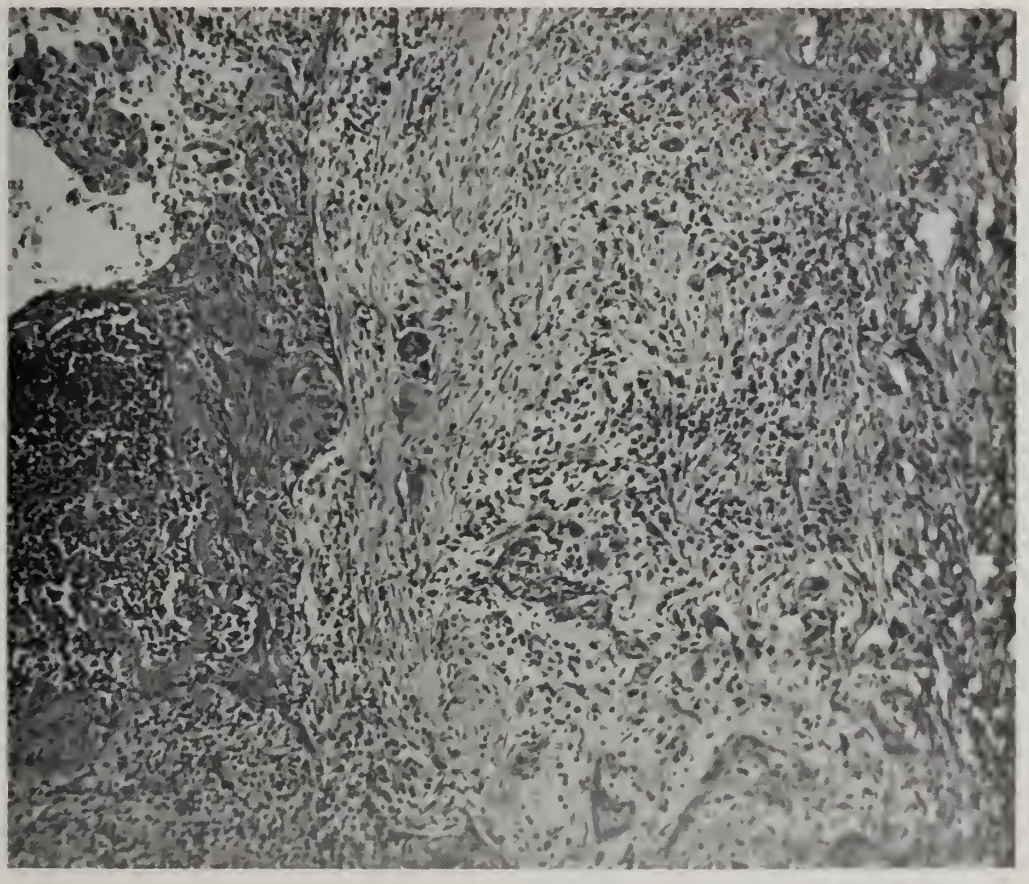


Fig. 5. Inguinal lymph node, showing metastatic squamous cell carcinoma. (H and E x 55)

quate amputation may result in recrudescence.

Summary

A case of squamous cell carcinoma arising in a longstanding sinus tract of a chronic osteomyelitis is presented. Review of literature reveals that such cases are not too frequent, but should be looked for in chronic draining osteomyelitis. A biopsy of the draining lesion at multiple sites and time intervals as well as regional biopsy of suspicious lymp nodes are the best means of ruling out malignant changes.

Acknowledgment: I wish to thank the Medical Illustration Service at the VA Center, Hampton, for their help and cooperation. I would also wish to acknowledge the assistance given by the Radiology Service.

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To Increase Physician Awareness

To increase physician awareness of the Volunteer Physicians for Viet Nam Program, the AMA soon will mount an intensified informational and advertising program. The campaign is aimed at assuring that ample future volunteers are available to serve 60-day tours. A secondary objective of the program is to provide the public with knowledge of the AMA's humanitarian VPVN program that brings urgently needed medical care to the civilian population of South Viet Nam. Under its current two-year contract with USAID, the AMA must provide 16 volunteer physicians monthly to serve in hospitals. Although the program has been in operation since 1965, many physicians remain unaware of its existence. The AMA's promotional campaign will include advertisements in some non-medical publications having a substantial circulation among physicians. Injuries should be directed to Charles H. Moseley, MD, director, VPVN, AMA Headquarters.

An Unusual Cause of Non-Union of the Tibial Medial Malleolus

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There are several possible causes for non-union of the tibial medial malleolus. In this unusual case there was synovial interposition.

NON-UNION OF THE MEDIAL MALLEOLUS following closed reduction of either a bimalleolar or isolated fracture of the distal tibia is not uncommon. This complication has caused some authors to insist upon open reduction and screw fixation with anatomical alignment of the fragment. There are several causes of non-union, including inadequate immobilization, interposition at the fracture site of the periosteum or soft tissues and failure to obtain adequate alignment of the fragment.

This report describes an additional cause of non-union of the medial malleolus which has not previously been recorded.

M. T., 32 year old white male, sustained a bimalleolar fracture. After closed manipulation and long leg casting, x-rays revealed adequate alignment of the fragments and no widening of the ankle mortise. He was placed in a short leg cast with walker four weeks following the fracture and allowed weight bearing. X-rays at six weeks revealed the fibular fracture to be well-healed but there was no evidence of callus formation of the medial fracture. The short leg cast was continued for four weeks more. At ten weeks x-rays showed no evidence of healing with sclerosis of the fracture margins. Ambulation was continued with gel cast support. At four months a frank non-union was diagnosed, as no callus was obvious by x-ray (fig. 1). The ankle was



Fig. 1

tender with brawny edema of the soft tissue. Motion was moderately restricted with point tenderness over the medial malleolus with an ill-defined fullness over the medial aspect of the ankle.

Open reduction was performed at four and one-half months post-fracture. On

opening the subcutaneous tissue, a synovial cyst measuring 4 x 2 cm. was encountered, covering the entire medial malleolus with



Fig. 2

the base communicating with the ankle joint at the fracture site (fig. 2). A fibrous union of the fracture was found with synovium invading into the proximal tibia and distal fragment. The tibia underlying the cyst was soft with loss of cortical bone. The fibrous tissue was excised and the synovial sac removed. The fragment was reduced and fixed with a two-inch screw with homologous bone graft impacted into the fracture site. Cultures of tissue and joint fluid were obtained at the time of surgery.

This case illustrates what we consider a rare complication—synovial interposition at the fracture site with resultant communicating synovial cyst and non-union.

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American College of Surgeons

American College of Surgeons is designing a new continuing education program for fellows and non-fellows who have been practicing surgery for ten years or more. To be known as the "Surgical Knowledge Self-Assessment Program," the test will be made up of about 700 questions. Test results will be scored by computer and reported on a confidential basis, thus enabling each participant to compare his performance with that of other surgeons. ACS expects to be able to offer the program starting late in 1971. There will be a nominal fee.

Comparison of Methods to Detect Significant Bacteriuria

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Several methods are evaluated for detecting significant bacteriuria. Either the Gram Stain or the Agar Tray technique may be useful in large surveys, doctor's offices, or small hospital laboratories.

THE IMPORTANCE of quantitative urine cultures in urinary tract infection has been accepted widely, especially in evaluating the asymptomatic patient and in epidemiological surveys. Agreement on the most significant level of bacteriuria is not complete. Kass[1] and McDonald and colleagues[2] have proposed a level of 100,000 (10^5) organisms/ml. as a significant count, whereas others[3-5] have suggested that lower levels, e.g., 10,000 (10^4) organisms/ml., correlate more accurately with clinical disease. The standard method for quantitating bacteriuria is the pour plate technique. Other techniques have been introduced to provide simplicity, including the streak plate and the Gram stain. The streak plate technique has shown good correlation with the pour plate technique.[6-8] Likewise, Gram stained and unstained smears of uncentrifuged[6,9,10] and centrifuged[10-12] urine have correlated well with pour plate colony counts at a level of 100,000 organisms/ml. Recently, a small agar tray kit has been introduced commercially* for quantitating bacteriuria. Several studies[9,13,14] of the agar tray method have shown good correlation with standard colony count methods. However, these studies of the agar tray method used criteria for significant colony counts differing from criteria currently recommended. Previous criterion for establishing significant bacteriuria ($>10^5$ organisms/ml) using the agar tray method was the presence of three or more colonies. Subsequently, an agar tray count of 26 colonies was felt necessary to establish significant bacteriuria. These later criteria are more in line with Ryan's initial study.[15] Only one previous study[16] has appeared using the newer criteria for interpretation of the agar tray count. Our paper compares the revised agar tray method and the Gram stain of uncentrifuged urine with colony counts determined by the streak plate method.

Methods

Five hundred thirty-eight urines were studied. The urines were obtained consecutively from specimens submitted to the microbiology division of the Medical College of Virginia Hospital Laboratories during

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*Testuria, Ayerst Laboratories, New York, New York 10017.

regular working hours. All specimens were examined simultaneously using the streak plate method, the agar tray method, and the Gram stained smear. Technical errors, such as failure to inoculate the agar tray or breakage of the slide prepared for Gram-staining, resulted in deletion of a few specimens from the final results.

Pour plates were prepared using two dilutions of urine (1:10 and 1:1000). Diluted urine (0.1 ml.) was added to a sterile petri dish, followed by 15 ml. brain heart infusion agar. The agar and urine were mixed well, and the agar allowed to solidify. No attempt was made to enumerate counts exceeding 100,000 organisms/ml.

Streak plates were prepared using a calibrated platinum wire loop (0.01 ml.) with preparation of two plates. The first plate was prepared by placing the loop of urine (0.01 ml.) on the central area of a sheep blood agar plate and streaking toward the periphery in overlapping, pie-shaped areas. The second plate was prepared by diluting a loop of urine (0.01 ml.) in 1 ml. of sterile saline, then a loop of the diluted urine is streaked on a sheep blood agar plate in the above fashion. Again, no attempt was made to enumerate counts exceeding 100,000 organisms/ml.

The agar tray kit has two parts. The first is an individually wrapped, sterile filter paper strip and the second is a small plastic tray containing trypticase soy agar. The tray is sealed by a scotch tape cover. The filter paper strip is dipped into the urine to the dotted line and removed. After waiting five seconds, the filter paper tip is applied to the agar surface for 10 seconds. The tray is resealed, inverted and incubated. All pour plates, streak plates and agar tray cultures were incubated at 37°C. for 18-24 hours in the same incubator.

Gram stains were prepared by placing a loop (0.01 ml.) of well-mixed uncentrifuged urine on a clean glass slide. The slides were air-dried at room temperature and stained. A urine was considered "positive" if bacteria were identified. The Gram stains were interpreted without knowledge of the colony counts. Each slide was independently interpreted by three observers. The authors interpreted the first 200 slides; the remaining 317 slides were evaluated by three experienced technologists. A slide was considered "positive" if at least two of the three observers found bacteria.

For comparison of the various techniques, counts were separated into three categories: (1) less than 10,000 (10^4), (2) 10,000-100,000 (10^4-10^5), and (3) more than 100,000 (10^5) organisms/ml. These categories would correspond to the general values designated: "not significant", "suspicious", and "significant".

Results

To evaluate the accuracy of the streak plate method in this laboratory, pour plate counts were performed on the first 54 urines in this series. As seen in Table I, the streak plate method correlated with the pour plate method in 51 of 54 urines for an overall accuracy of 94%. This was sufficient to allow the use of the more rapid streak plate method as the reference procedure.

TABLE I

Pour Plate vs. Streak Plate Colony Counts

Pour Plate		*Streak Plate*		
		$<10^4$	10^4-10^5	$>10^5$
$<10^4$	21*	21	0	0
10^4-10^5	6	2	4	0
$>10^5$	27	0	1	26
Total	54	23	5	26

*Indicates number of urine specimens in each category.

The agar tray counts are compared with streak plate counts in Table II. Correlation was achieved in 91% (481 out of 529) of the urine specimens. Best agreement was obtained in the "not significant" category, where 96% correlation between the two techniques was achieved. Only eight speci-

mens would have been placed in the next higher category erroneously by the agar tray count. Poorest correlation occurred in the "suspicious" category, where the agar tray method tended to give a lower count than the streak plate method.

TABLE II

STREAK PLATE VS. AGAR TRAY COLONY COUNTS

Streak Plate		*Agar Tray*		
		0-2	3-25	26 or more
$<10^4$	228*	220	8	0
10^4-10^5	75	17	55	3
$>10^5$	226	5	15	206
Total	529	242	78	209

*Indicates number of urine specimens in each category.

Gram stained smears were correlated only with the presence or absence of 100,000 organisms (streak plate count). The results are seen in Table III. Correlation was

TABLE III

STREAK PLATE COLONY COUNTS VS. GRAM-STAINED URINE SMEARS

	Streak Plate Count	Organisms on Gram Stain	
		Present	*Absent*
100,000	297*	37	260
100,000 or >	220	189	31
Total	517	226	291

*Indicates number of urine specimens in each category.

achieved in 449 of 517 for an accuracy of 87%. The rate of false positives and false negatives is almost identical, being 12% in the former and 14% in the latter. The variation between the three observers was constant, as was the variation between the two groups of observers. This indicates that a single trained observer would be as accurate as several trained observers.

Discussion

The results indicate that both the agar tray method and the Gram stained urine smear are accurate in assessing the quantity of urine bacteria. Since urine colony counts are confirmatory and not diagnostic of urinary tract infection, these simple techniques may prove useful in certain situations.

Previous studies[9,13,15] of the agar tray technique have varied regarding the number of colonies on the agar tray which correlate with the pour plate counts. The original manufacturer* recommended using three colonies on the agar tray to correspond with a count of 100,000 organisms/ml. The present manufacturer recommends 0-2 colonies as "negative" (<25,000), 3-25 colonies as "suspicious" (25,000-100,000), and 26 or more colonies as "positive" (> 100,000). Layman et al.[16] published their findings using the recommendations of the current manufacturer. They had an overall 94% correlation of the agar tray method with pour plate colony counts. However, their criteria for negative counts was set at less than 25,000 organisms/ml. We feel that a definitely negative or "not significant" colony count is more appropriately defined as less than 10,000 organisms/ml.[3-5] This study followed the newer recommendations except for the designation "negative" as being less than 10,000 organisms/ml. Our results using such criteria were 91% accurate. Ryan[15] points out that the eventual number of colonies on the agar tray depends on both the density and porosity of the filter paper used.

The Gram stain technique has been compared previously with urine colony counts and the results[9-12] have shown approximately 90% correlation. Results from examining wet vs. stained smears or from examining uncentrifuged vs. centrifuged urines have been relatively similar. For simplicity, we elected to study uncentrifuged urines, and the results (87% correlation) compare favorably with reports using centrifuged urines.

*Dundee Laboratories, Omaha, Nebraska.

Either the agar tray or Gram stain technique may be useful in large epidemiologic surveys of population groups for asymptomatic bacteriuria (i.e., school children), in physicians' offices or in small hospital laboratories. The agar tray method is very accurate (96%) in excluding urine colony counts above 10^4 organisms/ml. Consequently, the agar tray method would be applicable to large surveys for excluding those patients in whom no further diagnostic study appears indicated. These simplified methods do not preclude the necessity of more definitive bacteriological resources for primary isolation of offending bacteria and for drug sensitivity testing.

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Antibiotic Sensitivity of Salmonella and Shigella

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Isolated types of Salmonella and Shigella were sensitive to chloramphenicol and ampicillin in most cases. They should also be tested against neomycin, tetracycline and nitrofuran compound.

DURING THE PAST THREE YEARS, 51 organisms belonging to genus Salmonella and 20 organisms belonging to genus Shigella were isolated from blood, abscess, and gallbladder cultures. Ninety-five percent of these isolates were derived from the feces of children. The media employed for the primary isolation from the feces were Xylose Lysine Desoxycholate agar, Eosin Methylene Blue agar, and Selenite broth after which biochemical and agglutination tests were performed. Antibiotic susceptibility tests were done with high potency discs and the results were read after 24 hour incubation at 37 C.

In this locality, the pathogens primarily responsible for enteric fevers appear to be members of Shigella group D, Salmonella group B, and Salmonella group C-1. The drugs chosen for initial therapy are ampicillin and chloramphenicol. When the patients exhibit intolerance to the above drugs, normal substitutes are tetracycline, neomycin, or furoxone.

Table 1 lists the types of Salmonella and Shigella isolated and their sensitivity pattern to commonly used antibiotics. All isolates were sensitive to chloramphenicol but few were resistant to ampicillin. Haltalin and Nelson[1] tested 340 Shigella organisms of

TABLE 1

ANTIBIOTIC SUSCEPTIBILITY OF SALMONELLA AND SHIGELLA

ORGANISM	Number of Strains Susceptible								
	Total	Ampicillin	Chloramphenicol	Colymycin	Garamycin	Kanamycin	Keflin	Neomycin	Tetracycline
Shigella group D	16	14	16	16	16	16	16	16	14
Shigella group B	4	4	4	4	4	4	4	4	4
Salmonella group B	21	21	21	21	21	20	21	21	19
Salmonella group C-1	20	20	20	20	20	20	20	20	20
Salmonella group C-2	6	5	6	6	6	6	6	6	5
Salmonella group D	4	4	4	4	4	4	4	4	4

From the Department of Pathology, Fairfax Hospital, Falls Church.

which 11% were resistant to chloramphenicol and 6% were resistant to ampicillin. A majority of their isolates belonged to Shigella group B. Of 254 Salmonella organisms studied by Gill and Hook,[2] 35 were resistant to ampicillin, chloramphenicol, and tetracycline.

Generally, clinicians elect to use ampicillin rather than chloramphenicol due to the toxicity of the latter drug. Nevertheless, the results of comparative clinical trials by some investigators[3] indicate that chloramphenicol is more effective than ampicillin. Since the selection of initial drugs and sensitivity pattern vary greatly according to the locality, the authors decline comment on the superiority of any one drug. It is recommended, however, that bacteriological laboratories include several different drugs, mainly ampicillin, chloramphenicol, neomycin, tetracycline, or nitrofuran compound for sensitivity determination of Salmonella and Shigella organisms.

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ROLE OF THE STATE DEPARTMENT OF HEALTH IN COMPREHENSIVE HEALTH CARE—*Shanholtz*

(*Continued from page* 641)

private practitioners of medicine and public health can be maintained, and even strengthened, and if we are successful in providing comprehensive health care for the indigent, then perhaps we can limit the intrusion of government, as far as curative medicine is concerned, to the needy group.

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Cancer Trends . . . .

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Management of Cancer of the Larynx

Cancer of the larynx is an excellent example of a malignancy where early diagnosis, radiotherapy, surgery and chemotherapy have been making remarkable gains in respect to cure. In certain cases a combination of treatments appears to be the optimum approach, although the maximum potential of these combinations has still to be achieved. In fact, one is tempted to speculate that if a moratorium were called on all new research, the present methods available to us, or their combination together with earlier diagnosis, would continue to improve cure rates. It is even more satisfying that cure, in many instances, is now accompanied by an almost perfect functional result and rehabilitation is easing the burden on others.

For this discussion the larynx is divided into three major anatomic sites: the supraglottis, glottis and subglottis.

Incidence and Etiology

Laryngeal cancer represents about 1% of all malignancies with a 10 to 1 predominance in males. This places the incidence in males alone at about 2% of all malignancies. The classical male patient expected to develop a laryngeal cancer will be an unskilled worker in the lower socio-economic group, frequently a heavy whiskey drinker and smoker. He will be about 60 years of age.

A feature which consistently appears when the histories of cancer patients are examined is the poor description of etiological factors which might have contributed to the disease. In a recent survey about 50% of patients with glottic malignancy were recorded as being smokers and only about 2% as non-smokers. The remaining histories fail to make mention of the patient's smoking habits.

Considering the various sites, glottic lesions predominate, comprising about 70% of all cases, supraglottic lesions about 25%, the incidence of subglottic lesions being 5-10%.

Anatomy

The former confusing division of laryngeal malignancies into extrinsic and intrinsic lesions is now happily laid to rest. This has been aided by the clear definition of regions within the larynx associated with characteristic patterns of presentation, spread and, therefore, therapeutic approach.

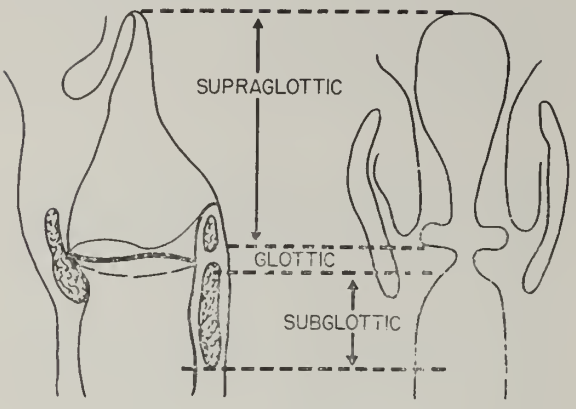
A. Supraglottic Region

The supraglottic region includes the laryngeal surface of the epiglottis, aryepiglottic fold, arytenoids, false cords and ventricular cavity. (Fig. 1) Lymphatics are plentiful throughout this region with the exception of the tip of the epiglottis. The lymphatics pass through the thyro-hyoid ligament to the lymph nodes of the upper internal jugular chain. Where these lymphatics traverse the pre-epiglottic

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Sponsored by the Professional Education Committee, Virginia Division, American Cancer Society.

space they communicate freely with one another and drainage may occur bilaterally.



Anatomic Subdivisions of the Larynx

Fig. 1

B. Glottis
The glottic region consists only of the true vocal cords and anterior commissure. The lymphatic drainage of the glottis is extremely sparse with eventual drainage into the upper internal jugular chain.

C. Subglottic Region
The subglottic region excluding the under surface of the true vocal cord extends to the lower margin of the cricoid cartilage. Lymphatics are not very plentiful in this region either. Drainage is to a pre-tracheal node and nodes in the mid and lower internal jugular chain.

Clinical Assessment and Staging

The commonest presenting symptoms of patients with laryngeal cancer is hoarseness, intermittent at first but becoming persistent. This may have been present for months or years. Dysphagia is a less common complaint, usually succeeding a history of hoarseness and representing extension of disease outside the larynx. The reverse order of symptomatology—dysphagia followed by hoarseness—is more indicative of a pharyngeal malignancy. Rarely, dysphagia will be the earliest symptom of a lesion arising in the supraglottic region. Pain, apart from that associated with dysphagia, is again a late symptom due to extension and involvement of the soft tissues of the neck and cartilage. Radiation of pain towards the ear may occur. Hemoptysis, wheezing, dyspnea and a swelling (lymph nodes) in the neck are unusual presentations. The uncommon subglottic lesions in particular, may present with dyspnea and wheezing.

The patient suspected of having a lesion of the larynx must have the larynx looked at. This is the most important part of the initial investigation, apart from an adequate history. If a good view of the larynx cannot be obtained by indirect laryngoscopy, then the assistance of the otolaryngologist must be sought without delay. The malignant lesion of the supraglottic area is often fairly well advanced, appearing as a proliferative and ulcerating lesion causing distortion and edema of surrounding structures. Other findings such as paralysis of the vocal cords are dependent on the extent of the lesion. The glottic malignancy is often a much more subtle lesion. A reddening and roughening of the vocal cord or a whitish excrescence may be all that is visible; on the other hand, a more typical proliferative papillary lesion producing immobility of one or both cords may be seen. The subglottic malignancy may be glimpsed, but will frequently require the aid of a more sophisticated observer and his investigations.

When a diagnosis of malignancy is being entertained following the preliminary examination, the patient should be admitted to hospital for investigation. Direct laryngoscopy under anesthesia is required to clearly define the extent of the disease and thoroughly examine the anterior commissure and subglottic region, which are frequently difficult to see on indirect laryngoscopy. The other advantage of direct laryngoscopy is that an adequate biopsy can be obtained and suspicious areas also biopsied. A negative biopsy from a lesion which clinically appears to be a cancer is an indi-

cation for further biopsy and close observation.

When the diagnosis has been confirmed, the extent of the lesion must be accurately determined. Direct laryngoscopy is obviously of great importance in this respect, but frequently the description of the lesion does not provide the radiotherapist with the assessment he desires. He should, therefore, be adept at visualizing the larynx himself. Since, however, a second anesthetic is rarely justified, he may have to forego direct laryngoscopy, and in these circumstances the specialized radiological procedures are a great help. The routine at the University of Virginia Hospital employs lateral soft tissue views of the neck, a barium swallow and coronal tomograms with and without phonation. Although popular elsewhere, contrast laryngography has not been frequently used as it rarely provides information not already obtained by the simpler procedures.

With an accurate picture of the lesion it can be staged according to one of various systems. That employed at the University of Virginia Hospital is the staging recommended by the American Joint Committee.[1] The value of staging is: (i) Results from different centers or within the same center at different periods of time can be compared; (ii) It forms a skeleton around which the treatment policy can be constructed; (iii) It is of help in indicating prognosis in a particular case. The AJC Staging describes the tumor (T), the regional nodes (N), and metastasis (M). Each letter is followed by a numerical suffix which describes increases in size and involvement.

Pathology

The most frequent malignant lesion occurring in the larynx is a squamous cell carcinoma. In the supraglottic region this is commonly an undifferentiated carcinoma; whereas, those of the glottic and subglottic regions are usually more highly differentiated. It should be recalled that except for the true vocal cord, which is covered by squamous epithelium, the larynx is lined by columnar epithelium where, however, squamous metaplasia may occur under a variety of circumstances. Adenocarcinomas, lymphosarcomas and other tumors occur rarely in the larynx.

The primary laryngeal lesion infiltrates in all directions and in the supraglottic region may be quite extensive before symptoms bring the patient to a doctor. Ultimately, infiltration extends beyond the larynx to involve cartilage and soft tissues of the neck. Lesions of the epiglottis in particular, extend rapidly into the pre-epiglottic space, a factor of considerable importance in determining treatment. McGavran in his study reported the incidence of lymph node metastasis from the various sites as glottis 0%; subglottis 19%; and supraglottis 33%, which coincides very nicely with the lymphatic drainage from these sites.[4] Lesions of the supraglottic region frequently metastasize bilaterally.

Blood-borne metastasis are unusual, but are seen more frequently these days with better control of the primary disease.

Pre-malignant and in-situ carcinomas of the larynx occur as in the uterine cervix, and require the same care in excluding possible invasion.

Policy

The formulation of a treatment policy for a specific malignancy represents a supreme inter-disciplinary effort. The viewpoint, philosophies and experience of the various members of the cancer team have to be considered together with the indications and results from recent and past research. When finally a policy has been established, that policy should be guarded from passing whims and fancies and only altered in the light of its having been proved inadequate, or there having been an unequivocal advance in treatment. Eventually a significant result may be obtained from a large group

of patients instead of fragmenting the series and devaluing the whole effort.

The effort at the University of Virginia Hospital over the years has been directed towards conservation rather than reconstruction; and it is, therefore, without apology that radiotherapy appears to play a predominant role in the treatment of laryngeal cancer at this institute. Our justification will ultimately be in our results; preliminary results (see below) indicate that this policy is not inferior to those practiced elsewhere.

Although radiotherapy and surgery can equally well cure early laryngeal cancers, it is felt that the functional result following radiotherapy is superior to that following surgery, and that where surgery is limited in an endeavor to preserve function, there has been a substantial risk of recurrence. Further, those cases which fail radiotherapeutically are amenable to salvage by the surgeon. In this respect our experience for early laryngeal cancers has been 100% successful. The surgery in these recurrent cases has not proved difficult and there has been no post-operative complications attributable to the previous radiation. None of the cases that recurred have developed lymph node metastasis as a consequence of the recurrence.

With regard to advanced laryngeal cancers, the indications from the literature are that pre-operative radiotherapy combined with radical surgery produces the best results.[3] It would also seem logical that to achieve these results both modalities must be used to its maximum potential and that low-dose radiotherapy in the clinical situation as presented by an advanced laryngeal cancer must be ineffective. However, carrying the radiotherapy dosage to maximum tolerance of the normal tissues would undoubtedly enhance the operative morbidity and it was felt justified at the University of Virginia Hospital to use a high dose but one somewhat lower than the maximum that the tissues could tolerate, namely, 5000 rads in 5 weeks. Our preliminary results are presented below. The morbidity associated with this procedure has been perfectly acceptable and will be reported elsewhere. Many other authors as summarized by Vermund[5] have also failed to demonstrate a significant difference in complications following pre-operative radiotherapy.

A further approach in the treatment of advanced laryngeal cancer has been the combination of chemotherapy with radiotherapy ($\pm$ surgery). In particular the apparent effectiveness of Methotrexate combined in this fashion has been demonstrated,[2] and a national cooperative study is currently under way. The University of Virginia Hospital has elected to support this study following preliminary work of their own which showed that Methotrexate could be given to toxicity and still followed by the radiation dose which would have been prescribed if radiation alone were used. To put this in another way, the radiation tolerance of the normal tissues did not appear to be decreased by the previous use of Methotrexate. On the other hand, the Methotrexate did frequently produce some shrinkage of the malignancy and it could be hoped that the lesion would, therefore, be more amenable to cure by radiotherapy. The study has yet to mature, but no difficulty is being experienced even when surgery has followed the combination.

The surgical procedure most routinely employed at the University of Virginia Hospital has been total wide-field laryngectomy with or without a concomitant radical neck dissection, depending upon the size of the primary lesion and the presence or absence of cervical metastases (see Management). Those "smaller lesions" that are felt by some to be amenable to so-called "conservative or limited laryngeal procedures", i.e., laryngo-fissure or hemi-laryngectomy, have been successfully treated by the even more conservative methods of curative radiotherapy.

Management

The management of laryngeal cancer at the University of Virginia Hospital has been developed from the considerations discussed above. The following in summary is the treatment currently employed for the three subdivisions, taking into account the stage of the disease.

I. Supraglottis and Subglottis

STAGE I	T1-NO-MO	Radiotherapy
STAGE II	T2-NO-MO	Radiotherapy
	T3-NO-MO T4-NO-MO	Pre-operative radiotherapy and surgery with or without pre-therapy Methotrexate.
STAGE III and STAGE IV	(N1 N2 and M1 lesions)	Treat primary in accordance with its T-staging with or without pre-therapy Methotrexate.

II. Glottis

STAGE I	T1-NO-MO	Radiotherapy
STAGE II	T2-NO-MO	
	a. Mobile cords	Radiotherapy
	b. Fixed cords	Radiotherapy and surgery
	T3-NO-MO T4-NO-MO	Radiotherapy and surgery Radiotherapy and surgery
STAGE III and STAGE IV	(N1 N2 and M1 lesions)	Treat primary in accordance with its T-staging.

Routine neck dissection is not carried out where no nodes are palpable in the neck except for advanced lesions. In summary:

Regional (Lymph Node) Metastases

Indications for Neck Dissection:

A. Operable palpable disease.
B. T3 and T4 lesions without palpable nodes.

With regard to distant metastasis a generally aggressive approach is adopted:

Distant Metastases

Treat the primary as outlined above if general condition is good and treat solitary metastasis by radiotherapy with or without Methotrexate.

Results of Treatment

Vermund in a recent issue of "Cancer" has provided an excellent review of treatment results in cancer of the larynx.[5] The data reported by some twenty investigators has been reviewed and their combined results for each stage of glottic, supraglottic and subglottic cancers summarized. The survival rates obtained with primary radiotherapy or surgery are compared and establish a yardstick by which our own endeavors can be measured (Table I).

TABLE I. (After Vermund)

Extent of Lesion	Primary Radiotherapy		Primary Surgery	
	*Absolute	†Relative	Absolute	Relative
Five-Year Survival—Glottic Cancer				
T1, NO	78%	86%	83%	85%
T2, NO	63%	71%	57%	69%
T3, NO	50%	55%	61%	69%
T4, NO	8%	14%	32%	35%
Five-Year Survival—Supraglottic Cancer				
T1, NO	65%	73%	59%	71%
T2, NO	61%	67%	61%	75%
T3, NO	36%	44%	45%	62%
T4, NO	14%	10%	56%	56%

*No correction applied for deaths due to intercurrent disease.

†Deaths from other causes than cancer excluded.

The results obtained by radiotherapy in glottic and supraglottic cancer compare very well with the surgical results. The differences in results for the T4 lesions can be readily explained when it is remembered that these are advanced lesions and that naturally, only the earlier T4's would be suitable for surgery. The results for subglottic cancer were 36% for radiotherapy and 42% for surgery; the results are not broken down further because of the small numbers. Patients with advanced laryngeal cancer (undifferentiated by site) with node metastasis were reported as having a 38% five-year survival after surgery. The sur-

vival for those with mobile nodes was 42%, when the nodes were fixed 14%.

At the University of Virginia Hospital we have reviewed the treatment records of some 300 patients with cancer of the larynx, covering the period 1956-1969. The Cobalt 60 teletherapy Unit was installed under Dr. George Cooper's direction in 1956. The policy for early carcinomas of the true vocal cord (glottic) was radiotherapy with surgery being used for the treatment of recurrences. The actuarial cure rate for 115 T1 and T2 lesions, *excluding* those salvaged by surgery, is 91% for the T1, NO lesions, and 80% for the T2, NO lesions. The five-year survival figure for the policy as a whole, that is including those salvaged by surgery, is given in Table II.

TABLE II. University of Virginia Hospital
FIVE-YEAR SURVIVAL RATE—EARLY GLOTTIC CANCER

Stage	Absolute	Relative
T1, NO	40/48 = 83%	40/43 = 93%
T2, NO	12/15 = 80%	12/12 = 100%

NOTE: 8/115 patients have recurred and 5/5 of these have been salvaged by surgery and are alive and well.

Recurrences for the whole group of 115 patients treated initially by radiotherapy is 8; 3 of these died of intercurrent disease before surgery; the 5 cases that came to surgery were all salvaged and are alive and well. None of this latter group showed any post-operative morbidity secondary to the radiotherapy; and none of this group developed nodes as a consequence of the recurrence.

A second group currently under review is 60 advanced laryngeal cancers (T3, T4 lesions). This group was treated by pre-operative radiotherapy (5000 rads in 5 weeks) and surgery, or radiotherapy alone. The preliminary results for the group are presented in Table III.

In summary, our results at the University of Virginia Hospital for early laryngeal cancer employing radiotherapy as the initial modality with surgery for recurrences, has proved highly effective. Experience with pre-operative radiotherapy for an advanced group of cases seems to indicate the effectiveness of this approach.

TABLE III. University of Virginia Hospital
TWO-YEAR SURVIVAL RATE—ADVANCED LARYNGEAL CANCER
(T3 and T4 Lesions)

	Absolute	Relative
All Cases.....	33/41 = 80%	33/40 = 82%
Pre-op Cases	22/26 = 86%	22/26 = 86%

Recent Diagnostic Advances

If the curability of laryngeal carcinomas is to be improved with preservation of function, reduction of therapeutic morbidity and mortality, then the answer must lie in early diagnosis. It must be possible to detect the malignancy when it is small and when cure rates are in excess of 90%, rather than several months and several centimeters of growth later when the five-year survival rates have collapsed.

Recent techniques currently being investigative at a number of centers that will hopefully accomplish this goal of earlier diagnosis are outlined below.

A. *Supravital Staining:* It has been found that toluidine blue will selectively stain carcinoma-in-situ and early invasive carcinoma otherwise undetectable. This technique is employed at the time of direct laryngoscopy and shows great promise.

B. *Laryngeal Stroboscopy:* By placing a sound probe into the larynx or externally against the anterior neck "voice prints" may be obtained. These "voice prints" are analyzed by computer and much like an EKG, differing patterns are indicative of specific pathologic states.

C. *Cytologic Diagnosis:* This is a "Pap Smear" of the true vocal cord mucosa. At the present time, however, a high degree of reliability has yet to be obtained.

D. *Microlaryngoscopy:* The diagnostic

The actions of the official Tincture and Extract of Belladonna result chiefly from their Atropine content . . . conclude Goodman and Gilman

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1/22/68—Treatment with 5% 5-FU cream commences. Patient K.L. showing widespread but mild solar keratoses (also known as actinic keratoses).



Fluorouracil—the Roche contribution

In 1962, Roche Laboratories introduced Fluorouracil Roche® (5-fluorouracil). Early clinical work with this drug suggested that it possessed a selective cytotoxic activity when applied topically to certain kinds of lesions. Based on this work and years of clinical trials, a standardized form of topical fluorouracil can now be recommended for treatment of multiple solar or actinic keratoses.

Efudex®(fluorouracil)—a new alternative to conventional therapy

Efudex presents the physician with a topical alternative to surgery in the treatment of solar or actinic keratoses. It is effective, comparatively inexpensive and especially well-suited for treatment of multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective on first and later applications

In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When lesions did recur or new ones appeared, repeated courses of Efudex therapy proved effective.*

2/68—After 11 days of treatment. ythema is seen at site of keratoses. In dition, numerous lesions not apparent ior to therapy have become manifest sharply defined reactions. Intervening in, also treated, shows no response to erapy.

19/69—One year after cessation of erapy. Skin appears clear with no evi-nce of scarring. Examination reveals ck of recurrence or the formation of w lesions.



Predictable sequence of therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of the keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two to three months before gradually receding.

Selective—with a high degree of safety

Despite the temporary unsightliness and discomfort of the inflammatory episode, Efudex is, in general, more readily tolerated than surgery. Clinical work shows the intense inflammatory response to be limited to the area of the lesion. Normal skin is not similarly affected. Another measure of Efudex safety: systemic absorption of topical fluorouracil was insignificant, indicating a low risk of systemic toxicity.*

Two strengths—two convenient dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, there are two important considerations. First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

2% and 5% Solutions; 5% Cream Applied twice daily—resolves solar or actinic keratoses.

new Efudex® (fluorouracil) cream/solution



For full prescribing information, please see the following page.

Roche introduces

Efudex®

(fluorouracil) cream/solution the new standardized topical for solar/actinic keratoses

Description: Efudex solutions and cream are topical preparations containing the fluorinated pyrimidine 5-fluorouracil, an antineoplastic antimetabolite.

Efudex Solution consists of 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris-(hydroxymethyl) aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream contains 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Actions: There is evidence that the metabolism of fluorouracil in the anabolic pathway blocks the methylation reaction of deoxyuridylic acid to thymidylic acid. In this fashion fluorouracil interferes with the synthesis of deoxyribonucleic acid (DNA) and to a lesser extent inhibits the formation of ribonucleic acid (RNA). Since DNA and RNA are essential for cell division and growth, the effect of fluorouracil may be to create a thymine deficiency which provokes unbalanced growth and death of the cell. The effects of DNA and RNA deprivation are most marked on those cells which grow more rapidly and which take up fluorouracil at a more rapid pace. The catabolic metabolism of fluorouracil results in degradative products (*e.g.*, CO_2, urea, α-fluoro-β-alanine) which are inactive.

Studies in man with topical application of ^{14}C-labeled Efudex demonstrated insignificant absorption as measured by ^{14}C content of plasma, urine and respiratory CO_2.

Indications: Efudex is recommended for the topical treatment of multiple actinic or solar keratoses.

Contraindications: Efudex is contraindicated in patients with known hypersensitivity to any of its components.

Warnings: If an occlusive dressing is used, there may be an increase in the incidence of inflammatory reactions in the adjacent normal skin.

Prolonged exposure to ultraviolet rays should be avoided while under treatment with Efudex because the intensity of the reaction may be increased.

Usage in Pregnancy: Safety for use in pregnancy has not been established.

Precautions: If Efudex is applied with the fingers, the hands should be washed immediately afterward. Efudex should be applied with care near the eyes, nose and mouth. To rule out the presence of a frank neoplasm, a biopsy should be made of those areas failing to respond to treatment or recurring after treatment.

Adverse Reactions: The most frequently encountered local reactions were pain, pruritus, hyperpigmentation and burning at the site of application. Other local reactions included dermatitis, scarring, soreness and tenderness.

Also reported were insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity and lacrimation.

Laboratory abnormalities reported were leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Efudex should be applied twice daily with a nonmetal applicator or suitable glove in an amount of the solution or cream sufficient to cover the lesion. When Efudex is applied to a lesion, a response occurs with the following sequence: erythema, usually followed by vesiculation, erosion, ulceration, necrosis and epithelization. The lower frequency and intensity of activity in adjacent normal skin indicate a selective cytotoxic property. Medication should be continued until the inflammatory reaction reaches the erosion, necrosis and ulceration stage, at which time use of the drug should be terminated. The usual duration of therapy is from 2 to 4 weeks. Complete healing of the lesion may not be evident for 1 to 2 months following cessation of Efudex therapy.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Clinical Studies: The effectiveness of the three preparations as determined by complete involution of solar keratoses was: 2% Solution, 77% of 282 lesions; 5% Solution, 88% of 202 lesions; and 5% Cream, 85% of 189 lesions. In those lesions where complete involution followed treatment, the rate of possible recurrences observed clinically at periods up to 12 months or more was: 2% Solution, 4.6% of 218 lesions; 5% Solution, 1.7% of 177 lesions; and 5% Cream, 5.6% of 160 lesions. Because of the toxic potential of fluorouracil, some physicians preferred to use the 2% solution when large areas were to be treated. Approximately 30% of the lesions required treatment for two weeks or less; approximately 78% required four weeks or less for adequate treatment.

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capabilities of the surgeon are greatly enhanced by use of the operating microscope at the time of direct laryngoscopy. Subtle changes are more easily noticed and biopsy techniques become more accurate.

E. *Transconioscopy:* This approach requires the passage of a nasopharyngoscope through an incision or puncture of the cricothyroid (conic) ligament. This procedure may be performed under local anesthesia and provides a view of the subglottis and inferior aspect of the vocal cords which are usually unseen.

F. *Mediastinoscopy and Cervical Lymphangiography:* These techniques, unlike the former, are evaluators of regional metastic spread. In mediastinoscopy, an incision in the anterior inferior neck is created. Through this incision a modified laryngoscope is inserted into the mediastinum, enabling direct visualization and biopsy of pre-tracheal and mediastinal lymph nodes.

Cervical lymphangiography requires the instillation of contrast material into one of the fine lymphatic channels of the upper neck. The filling patterns of the cervical lymph nodes may then be studied on x-ray, and pathological nodes can be pinpointed.

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Comment

We are grateful to Drs. Constable, Fitzhugh, Marks, and Robbins for this thorough review of a subject that is both foreign and confusing to many physicians. The authors properly stress the importance of mirror examination of the larynx in any patient with even minimal symptoms. Even our medical students are able to learn this simple technique well enough to visualize the larynx in the majority of patients and there seems little reason to consider this examination the exclusive domain of the "specialist". Widespread use of this technique as part of the physical examination, particularly in the presence of subtle, seemingly insignificant symptoms, will undoubtedly uncover some laryngeal abnormalities at a time they are more suitable for treatment.

Once pathology in the larynx is suspected, special procedures are clearly required for establishing the diagnosis and the extent of the disease. In contrast to the experience of these authors we have found the contrast laryngogram a useful technique on our Head and Neck Cancer Service at MCV. Surgeons rely mainly on endoscopy for evaluation, but laryngograms have been helpful in supplementing this examination as well as providing a permanent pre-treatment record of the lesion. One must agree with the authors, however, that this is not an essential feature of our evaluation.

The staging of lesions with a universal "language", such as the American Joint Committee Staging Procedure, is essential to standardization of management procedures unless our past experience is to be ignored in selecting the most suitable treatment method for the individual case. In this and other sites it is often frustrating for the physician to adapt this "coding" procedure to some patients, but it is the only way results from various centers can be properly compared and lessons learned. It is also the only way we can determine the value of new or modified treatment methods.

Probably one of the most significant improvements in the treatment of cancer of various sites has been the appreciation of a multidisciplinary approach to the selection of treatment, and this is well demonstrated by the joint authorship of this paper

by radiotherapists and otolaryngologists who have clearly developed a cooperative approach. In a similar cooperative program between surgeons, otolaryngologists, and radiotherapists on the Head and Neck Service at MCV, we have come to somewhat different conclusions regarding the management of some of these laryngeal cancers. It may be worthwhile to outline these minor differences, if only to emphasize the need for continued objective assessment of our results.

We would agree with the authors that primary radiotherapy for an early lesion of the glottis is essentially equal in therapeutic effectiveness to partial or total laryngectomy, and radiotherapy has the distinct advantage of producing a better functional result than surgery. The concept of employing primary radiotherapy for more advanced lesions of the glottis, and then surgery for any recurrence, is presented by these authors as preferred treatment on the basis of collected results reported by Vermund in *Cancer* (March, 1970). Our authors present comparable figures for radiotherapy and surgery for these more advanced lesions but careful analysis of the data from Vermund's collective review demonstrates clearly better results by surgery in this group if surgically salvaged recurrent cases are considered radiation failures. The argument that morbidity after surgery in an irradiated patient is not significantly greater than in the previously untreated patient is used as justification for this policy and assessment. This is clearly not our experience nor is it actually the reported experience in the collective review referred to. In addition, we have occasionally found it difficult to determine the presence or absence of recurrent carcinoma of the larynx on follow-up examination after primary radiotherapy. For these reasons we employ primary laryngectomy for the more advanced glottic cancers without an initial trial of radiotherapy and we believe we have less morbidity and better results. The continued study of carefully controlled experience with T_3 and T_4 lesions will undoubtedly clarify this issue.

Another group of patients with laryngeal cancer in which our approach at MCV differs from the approach outlined in this paper is in the treatment of all but T_1 lesions of either the supraglottis or the subglottic region. The collected data of Vermund reported by these authors show better results for surgery for these sites even if surgically salvaged radiotherapy failures are included as radiation successes. Using a more accurate calculation of treatment success or failure, these differences are accentuated. Our head and neck cancer team feels that laryngectomy is the preferable approach at this time for these patients.

The authors place some reliance on the theoretical value of full course preoperative x-ray therapy for some patients with advanced laryngeal lesions, but this is based on reported data that is not yet convincing. Unfortunately the distinct radiotherapeutic response noted after full course preoperative treatment of lung, esophagus, and bladder cancers has failed to produce a change in cure rates of cancers of these sites in careful randomized studies. There is also rationale for short course low dose therapy as a preoperative adjunct for this and other cancers, but this too will require testing by a randomized treatment protocol since no reported figures have established benefit with this approach. (A randomized study of this type is now in progress on the Head and Neck Service at MCV.)

Similar comments might be made regarding the use of chemotherapy as an adjunct to other therapy. Actually, the low response rate of recurrent laryngeal cancer and other recurrent head and neck cancers to systemic chemotherapy is also prejudicial to the concept of employing chemotherapy as an adjunct to either primary irradiation or primary surgery. An objective answer to this question will depend on the cooper-

(Continued on page 676)

Public Health . . . .

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Can Medicaid Experience Help Comprehensive Health Planning?

The Virginia Medicaid Program is computer oriented. It was designed not only to facilitate prompt payment of accounts but to provide for program management, thereby avoiding problems of overuse and abuse. Thus far it has scored well on both counts. Its success has attracted nationwide interest and its specifications are being used as a model for new minimum standards for other Medicaid programs.

During the first year of operation, 1,212,077 claims, involving medical care for approximately 3.6% of Virginia's population and $24.4 million of tax funds, passed through the Medicaid computer. As reports flowed in, it soon became evident that a wealth of information was being accumulated which could be used beyond the primary intent of program management. Could it be used for planning the delivery of health care? The answer seemed to be a ready "Yes" especially in view of the fact that the Health Department has administrative supervision over Medicaid as well as Comprehensive Health Planning.

The idea of systematic planning for comprehensive health services began to receive strong popular support about the same time Medicaid came into being. It was officially sanctioned by Congress in 1966 through Public Law 89-749. To date planning projects for five areas in Virginia have been approved: the Capital Area, Tidewater, Appalachia, Roanoke Valley, and Central Virginia. Approximately 40% of Virginia's population resides within these areas. Planning within each district will be guided by a council composed of representatives of the health professions, hospitals, nursing homes, voluntary agencies, as well as consumers.

As local planning council began to examine the needs, resources, and public attitudes, it became evident that while the usual health data were available, i.e., mortality, morbidity, manpower, etc., the information being accumulated in Medicaid could be an innovative force in health planning. Some questions which the Medicaid computer might aid in answering came immediately to mind.

1. What is the experience rate, by diagnostic category, of the low-income group? (The low-income group experiences the same illnesses as the rest of the population, but at a higher prevalence.)
2. What are the patterns of utilizing medical services?
3. Can instances be identified when care is provided at a higher level than is justified by the individual patient's clinical condition; or, on the other hand, might it be possible to discover cases in which the clinical situation required more sophisticated care than the facility being used was designed for?
4. How effective is a utilization review committee in evaluating the matching of the facility with the patient's needs at different stages in the course of his illness?
5. Based on experience rates, what should be the relative proportions of different levels of health facilities within a planning district to enable the district to become medically self-sufficient? Conversely, what levels of facilities

should be provided only on a regional, or larger-than-district, basis?

Exploratory Study

An exploratory study of the Virginia Medicaid records has been initiated by the Office of Comprehensive Health Planning, State Department of Health, to discover how best the currently available records may become more helpful in planning. An attendant point being examined is how much additional information for planning might be secured from minimum alterations in existing claim reports.

Criteria for Selection of Study Districts

The exploratory study is to be concentrated on two of the present planning districts in Virginia. The two were selected with the following criteria in mind:

1. Entire planning districts should be studied as a whole, assuming that each will have essentially the entire gamut of different level health facilities.
2. The district studied should be reasonably self-sufficient insofar as health services are concerned. Few patients should have to be sent outside the district to secure health services and, at the same time, services provided within the district should not be so unusual or exotic as to attract large numbers of patients from outside the district under study.
3. The district under study should have an average or median number of health facilities and health personnel.
4. Economic indices of the district studied should be about median for the State as a whole.

Areas within Districts 11 and 21 seem to meet the above criteria. As illustrated in Table I below, the percentage of Medicaid eligibles in the total population of the areas selected is about the same as the percentage within the State as a whole.

Criteria for Selection of Diseases

It was decided that it would be more productive to concentrate exploratory studies on a limited number of disease categories over a longer period of time, rather than to deal with all the patients seen within a brief period. The following criteria were established for the selection of diseases:

1. Diseases selected should have a fairly protracted natural history (chronic disease) requiring periods of inpatient hospital and/or nursing home care, as well as ambulatory care.
2. There should be good possibilities for the timely use of preventive measures at strategic points in the developing natural history of the particular disease being studied. (Note: the word, "preventive", is used in the broad

TABLE I

Medical Eligibles as Percent of Total Population

(Eligibility standard: $2000 income for breadwinner, plus $500 for each dependent, 1969)

	Medicaid Eligibles as Percent of Total Population
Virginia	7.3
Low percentage examples in several localities:	
Fairfax City	0.03
Fairfax County	1.7
Falls Church	2.0
Virginia Beach	2.0
Henrico County	2.4
High percentage examples in several localities:	
Highland County	17.4
Lee County	17.1
Accomack County	15.8
Rockbridge County	15.8
Cumberland County	14.9
District 11—Total	7.7
Amherst County	7 2
Appomattox County	10 3
Bedford County	9.6
Campbell County	6 5
Lynchburg	7 2
District 21—Total	5.5
Hampton	4 5
Newport News	6 2
Williamsburg	7.9
James City County	6 2
York County	5 0

sense, of both preventive occurrence and preventing progression.)

3. Diseases selected should have a sufficiently high incidence and prevalence in the areas studied so that within a relatively short period of observation it would be easier to obtain statistically significant results.

The diagnostic categories which have been selected for the exploratory study are:

Pulmonary tuberculosis
Malignant neoplasm of the cervix uteri
Diabetes mellitus
Hypertensive heart disease
Acute myocardial infarction
Cerebral hemorrhage
Pneumococcal pneumonia
Duodenal ulcer
Acute appendicitis
Inguinal hernia
Normal delivery
Various complications associated with pregnancy and delivery

A major problem involving coding was encountered early in the study. The Medicaid morbidity coding was set up with a three-digit code for hospital patients, either inpatient or outpatient, permitting 999 diagnoses. However, only two digits were provided in the code for physicians, permitting only 99 different diagnostic categories. This is unfortunate, since the exploratory study is intended to elucidate the patterns of utilization which involve both hospital care and care by physicians independent of hospitals. The problem encountered represents the type of adjustment in claims coding which might prove feasible.

Summary

It is expected that much valuable information can be gained from an exploratory study of the possible usefulness of Virginia Medicaid records in relationship to Comprehensive Health Planning. This is a preliminary report of the study, given to call it to the attention of the physicians of Virginia. From time to time as the study progresses, pertinent information will be reported through the pages of this journal.

MONTHLY REPORT OF BUREAU OF COMMUNICABLE DISEASE CONTROL

	Aug. 1969	Aug. 1970	Jan.-Aug. 1969	Jan.-Aug. 1970
Brucellosis	2	4	23	37
Diphtheria	—	—	1	—
Hepatitis	273	46	939	288
Meningitis (Aseptic)	28	5	43	11
Meningococcal Infections	5	1	39	52
Poliomyelitis	—	—	—	—
Rocky Mt. Spotted Fever	15	10	46	53
Rubella	9	53	681	1614
Rubeola	35	11	1971	675
Tularemia	—	—	+	+
Typhoid Fever	2	—	+	—
Rabies in animals	7	21	176	309
Venereal Diseases:				
Syphilis	108	93	916	938
Gonorrhea	1416	1251	9304	8043
Other	3	6	18	32

Mental Health . . . .

DOUGLAS F. POWERS, M.D.

The Virginia Treatment Center for Children—Eight Years Later

The Virginia Treatment Center for Children, after years of preliminary effort by many persons, opened its doors for the first patients eight years ago this past spring. Its mandates, according to the Virginia Statutes, were in the areas of service, teaching and research in behalf of emotionally disturbed children.

The first Director was appointed effective August 1, 1961, which, fortunately, gave a period of several months for operational planning. This interval provided opportunity for consultation with many individuals, to elaborate policy, recruit a small nucleus of staff, and to begin a continuous in-service training program. This last function was extremely important since it was impossible at that time to recruit and bring to the VTCC a full complement of trained professional staff.

Our contention was that a quality service program had to have first priority. Consequently, a small out-patient clinic operation began early in 1962 in preparation for the opening of one of the four ten-bed in-patient units in May of 1962. Gradually more staff was attracted over a period of two years, until the total service program of out-patient clinic, forty in-patient beds, and a small day-hospital program were in full operation.

These basic clinical services have continued. In addition, the child psychiatrists at the VTCC have, for the past eight years, provided a pediatric liaison service for in-patient children in the MCV Hospitals.

Powers, Douglas F., M.D., *Director, Virginia Treatment Center for Children and Chairman and Professor, Division of Child Psychiatry, Medical College of Virginia.*

Approved for publication by the Commissioner, Department of Mental Hygiene and Hospitals.

Further, a Children's Psychiatric Hospital Field Unit was begun nearly five years ago under a five-year grant from the National Institute of Mental Health. This grant has made it possible for a professional team to travel periodically throughout Virginia to provide a variety of services: field screening of candidates for in-patient programs, community liaison for children who soon would return home, and follow-up consultation regarding further management of discharged patients.

Also, this Field Unit has provided valuable continuing education programs at a number of locations throughout the State and has been a means of collecting data on discharged patients for research purposes.

Teaching Activities

The teaching programs have been many and varied. They began with an In-service Training Program for Child Care Technicians which has been continuous and which has attracted grant support during the past five years.

In one of the dedicatory addresses in December of 1961, a statement was made, "that we shall endeavor to provide a living laboratory where all professional disciplines concerned with prevention, care and treatment for emotionally disturbed children can have a valuable learning experience." In quite an effective manner this has been accomplished:

1. July 1, 1964 the *Child Psychiatry Residency*, the only one in Virginia, was approved by the Council on Medical Education and the Residency Review Committee of the American Medical Association. Simultaneous approval was received from the Training Committee of the American Association of Psychiatric Services for Children.

Since that time twelve full-time physicians have participated in this two-year program, which follows the regular training program in general psychiatry. *Eleven* physicians have been graduated and all are practicing child psychiatry in Virginia. An NIMH Training Grant gives partial support for this program. Additionally, the general residents in psychiatry at the Medical College of Virginia have had rotations through this program for periods of time ranging from two months to a year. Several residents from the State Hospitals have had short rotations through the Center.

2. Medical students in each of the four years have been provided minimum experience with disturbed children. The child psychiatry clerkships have become increasingly sought after by students, and at this time more than half of the students in their clinical years request such experiences, though the size of the facility precludes the possibility of this. The greatest in-depth medical student experience has been the full-time summer clerkships for six medical students each summer.
3. Pediatric residents from MCV may elect a child psychiatry rotation, and it is hoped that this will be expanded in the future. Pediatric residents from Kings Daughter's Children's Hospital, Norfolk, come here for brief observational periods, and the child psychiatrist from the Field Unit has conducted continuing seminars for these house officers when in the Norfolk area.
4. A limited number of nursing students from MCV may elect a child psychiatry rotation, and all nursing students from Richmond Memorial Hospital have a two-week rotation here. Continuing seminars are conducted regularly for nursing groups throughout the state who wish to visit the Center.
5. Both the University of Virginia and Virginia Commonwealth University graduate students in Special Education for the emotionally disturbed have an extended practicum at the Center. Many interested educational groups are here throughout the year for seminars about teaching emotionally disturbed children.
6. At any one time there will be several students in Recreation and Occupational Therapy who are here in field placements. All dietary interns from the Medical College of Virginia rotate through the Center.
7. Two second year social work students from VCU have a placement each year for the academic year. Plans are under way to expand this to include students from other Schools of Social Work.
8. In July of this year a pre-doctoral internship in *clinical child psychology* was started and there are two persons in this program. This is the first program of this kind in Virginia.

Research

From the very beginning a research attitude has been fostered throughout the staff and a number of clinical projects are being pursued by many members of the professional staff.

Data for "A Study of Admission Committee Procedures" have been collected, preliminary graphs have been constructed, and a comparison with early methods of selection of children is now being made to determine the efficacy of our present admission procedures.

A preliminary survey of all the MMPI's in the study of "The Selection of Effective and Ineffective Child Care Workers" has been conducted and hypotheses are now being formed for computer analysis of these MMPI's.

Three studies, "The Long Term Effects of Placement of Children," "Characteristics of Suicidal Children," and "Encopresis in

Children" are still in the stage of record search.

During the Spring of 1970 two pilot studies related to the project, "Behavior Modification in the Classroom for Emotionally Disturbed Children", were conducted. These two studies are entitled, "The Effectiveness of Concentrated Academic Instruction Through Selected Sensory Channels" and "Behavior Modification in an Individualized Classroom Using School-Oriented Rewards". These studies have been written up and will be submitted for publication in a suitable journal.

The most ambitious research project, "Behavioral Dimensions for Emotionally Disturbed Children", is well under way and beginning to yield useful information. A preliminary report was presented at the annual 1970 Spring Forum for Child Psychiatry and is to be published in the Fall issue of *Mental Health in Virginia* and also in the *MCV Quarterly*. Application has been made to NIMH for a grant to continue to develop this project.

Finally, a presentation entitled, "The Intake Screening Procedure", which deals with the screening of applicants for short-term residential treatment, has been accepted for the 1970 Scientific Meeting of the American Association of Psychiatric Services for Children. This paper will be submitted later to the *Journal of the American Academy of Child Psychiatry*.

Miscellaneous

There are many items related to the total programs which could be enumerated but suffice it to mention only a few:

1. The Eighth Annual Spring Forum for Child Psychiatry was held in May with approximately five-hundred-fifty persons in attendance from throughout Virginia, the surrounding states and the District of Columbia. In fact, the meeting was so well attended that it was necessary to "pipe" the proceedings to another auditorium to take care of the overflow crowd. Again, the papers will be published in the special summer issue of *Mental Health in Virginia* and most likely in the winter issue of *MCV Quarterly*.

   With the wide interest in the state at the time that the VTCC became a reality, it was soon apparent that there were some magical expectations that this one small program should meet the needs throughout the State for emotionally disturbed children. This was unfortunate in that the anxieties of referral sources were sometimes translated into irrational anger toward the Center when it did not live up to the fantasied expectation. The idea for the Spring Forum was conceived as a communication medium whereby referral sources and staff might become better acquainted first-hand and work together toward some solution of many monumental problems relating to children. This kind of exchange has been most productive and has been augmented by the person-to-person work of the traveling Hospital Field Unit.
2. Through the guidance of the Audio-Visual Department at MCV, under the direction of Mr. Melvin Shaffer, an effective closed circuit video-tape facility has greatly augmented many of the functions related to service, teaching and research. In addition to using this medium for improving resident skills in psychotherapy, many quality teaching tapes have been prepared. For example, "Anorexia Nervosa in Children", "Adolescent Suicide", "Behavioral Modification in the Classroom", "Two Sirs with Love"—a tape demonstrating student-generated teaching, "Therapeutic Recreation for Children", "Occupational Therapy with Disturbed Children", and several documentary tapes about the VTCC.



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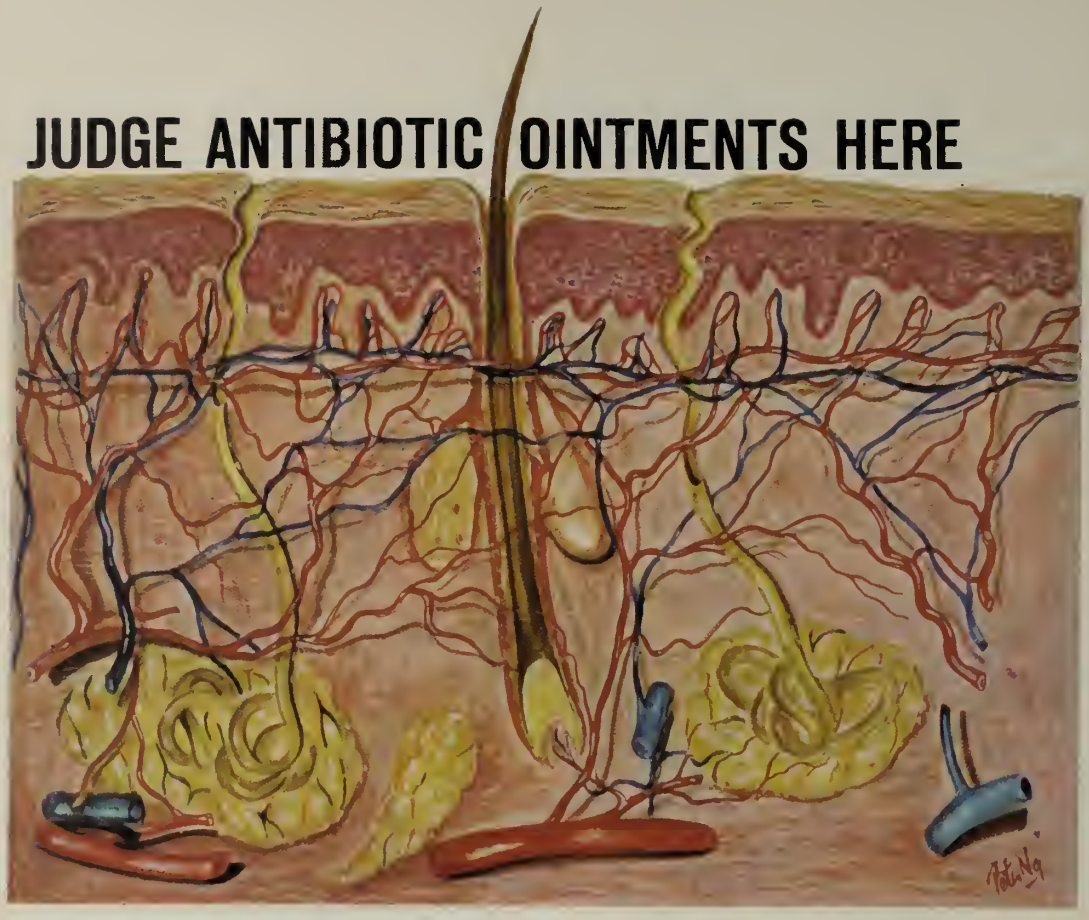
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3. Volunteer interests in the community have been utilized in many ways—to provide arts and crafts materials, to equip a children's library, to provide recreational activities both at the Center and in the community. These are too numerous to mention and have contributed widely to the success of the treatment programs. A unique aspect of the volunteer program is the "People Bank", whereby individuals in the community with particular skills needed by an individual child are brought to the Center on a regular basis to work with that child.
4. A full-time two-week workshop is held each summer for supervisory personnel from school systems throughout the state. This workshop focuses on educational needs and methods of meeting these for emotionally disturbed children. The workshop, a cooperative effort of the State Department of Education, Virginia Commonwealth University and the VTCC, is attended by 20-25 supervisors and principals and has been received with much interest and enthusiasm.
5. The Center has had to rely quite heavily on college and university students to fill many of the child care technician positions. Literally hundreds of students have worked here part-time over the past eight years and a great many of them have discovered a real interest in the "helping" professions and continued their studies in special education, social work, psychology, and other fields related to work with children. The universal comment, with only a very rare exception, of these students is that the experience has greatly enriched their lives.
6. The child psychiatry library, with official and unofficial funds, has gradually increased its acquisitions so that it is now to the level of most divisional libraries around the country. Tompkins-McCaw Library has duplicated many of these acquisitions and purchased others for which the Center had no funds. The two libraries complement each other with child-related publications and provide ready access to many students.
7. This past spring the child psychiatry faculty instituted an annual child psychiatry prize for an outstanding clinical clerk. The prize consists of a textbook and a cash award of $50.00. This year's prize was shared by Mrs. Carol Owens and Hugh McMahan, for their contributions to the study and preparation of a paper entitled "In-Patient Treatment of Severe School Phobia".

Potential Problems

Through a combination of fortunate circumstances the VTCC has been able to attract and train a well qualified staff, and has been able to have the quantity of personnel necessary in an active treatment and teaching program of this kind. Many who have come here from all parts of the United States, and other countries, have said they came because of the quality and diversity of the programs which provided them an optimal opportunity to be of service, to be creative and at the same time to extend their own learning horizons. In nearly all instances the decision to join the staff has *not* been on the basis of outstanding salaries —quite the contrary in most instances. In a time of "tight money" this is becoming a real problem, and it is compounded by a disparity between salaries here and at the Medical College of Virginia. The Virginia Statutes specified that the VTCC be located in a medical school complex, and by agreement between the State Hospital Board and the Board of Visitors of the Medical College of Virginia, it is officially designated as the Division of Child Psychiatry for MCV. Nevertheless, the two institutions are admin-

istratively separate and in nearly all instances the fixed salaries here on the State personnel scale are below the potential salaries at MCV with its ceiling arrangement for faculty members. The qualified staff members at the VTCC, in several professional disciplines, hold full-time geographic faculty appointments in the medical school. They are paid on the State personnel scale by the Department of Mental Health, and none of them are paid anything from MCV funds, with the exception of approximately one-sixth of the salary of the Director who also serves as Chairman and Professor of Child Psychiatry for the Medical College.

This area of concern is made more graphic when one notes that of the total annual budget for child psychiatry in the VTCC-MCV complex, only .0064% (slightly more than one-half of 1%) is provided through the MCV budget; this amount of money has remained the same since the opening of the Center. Most of the funds are appropriated by the Legislature through the Department of Mental Health, plus the previously mentioned grants which the Center has attracted.

All of this is to say that MCV has been provided an extensive teaching program in child psychiatry at almost no cost to that institution. It could be argued that both are State institutions and that it makes no difference; but there are many areas within the MCV Hospitals where children with a wide range of emotional problems need care and where teaching activities at all levels could be amplified. While patient care and teaching at the VTCC have reached and been maintained at some level of excellence, there are not enough "horses" in this one small institution to expand and refine the needed service and teaching requirements within MCV proper. To do so would require some funding by MCV, but not a lot of funding, and some additional personnel. Not to do so carries the risk of spreading the present VTCC staff so thin as to threaten the quality of service and teaching at its present level. With increased medical student enrollment, increased nursing and house staff interest in children, it would appear that the time is NOW for serious consideration, commitment, and action to the child psychiatry efforts in this medical center. This might mean a slight shifting of some priorities on the part of MCV but could quickly result in improved application of effort with increase in quality and quantity of services related to children and their families.

Further, the struggling Department of Psychiatry at MCV over the past decade, with its many personnel changes, has been a major factor in a continuing difficulty in coordination of teaching efforts between child psychiatry and general psychiatry. Recent signs suggest the beginning of a long-overdue period of stability. With this prospect it may be possible that the VTCC programs (and other affiliated child programs such as Memorial Guidance Clinic, Educational Therapy Center, Westbrook Adolescent Unit, Central State Hospital Children's Unit, and others) could be utilized to effect a child psychiatry consortium which would provide more and better services and teaching experiences in behalf of children in this state.

Another hindrance in the sustaining of a high level of staff morale is related to the on-going question of the proposed Leigh Street extension and the site selection for the Veterans Administration Hospital. At intervals both of these projects have been discussed in numerous meetings and at various levels for the past six years. Each plan could take a considerable amount of the land area now occupied by the VTCC. Either, if executed, would seriously handicap the functions of this institution. Many alternatives have been proposed, but insofar as we know the issues have not been resolved.

Both of these considerations are many-faceted and involve political negotiations among city, state and federal governments.

(*Continued on page 676*)

Medicare (Part B)....

CURTIS J. KELLY
Administrator

Psychiatric Services Limitation

Regardless of the actual expenses for physicians' services incurred in connection with the diagnosis and treatment of mental, psychoneurotic or personality disorders of persons who are not inpatients of hospitals, the amount of such expenses that can be considered by Medicare during a calendar year is limited to 62½% of the actual (to a maximum of $500) expense. This amount is then subjected to any applicable deductible to be met, with reimbursement being made for any portion exceeding the deductible at the rate of 80%.

The term "mental, psychoneurotic, and personality disorders" is defined as the specific psychiatric conditions described in the American Psychiatric Association's "*Diagnostic and Statistical Manual—Mental Disorders*". The limitation applies only to expenses incurred for physician's services rendered in connection with one of these psychiatric conditions (with no distinction being made between the services of psychiatrists and nonpsychiatrist physicians) and any items or supplies furnished by the physician in his own office. Services furnished by other health personnel, including home health services and outpatient hospital services, would not be subject to the special psychiatric limitation even if the services are in connection with a condition included in the definition of "mental, psychoneurotic, and personality disorders".

The limitation is applicable to expenses incurred in connection with the treatment of an individual who is *not an inpatient of a hospital*. It is applicable to services furnished by physicians in outpatient departments, in a physician's office, the patient's home, an extended care facility, etc. The term "hospital" in this context means a hospital which is primarily engaged in providing by, or under the supervision of, physicians to inpatients: (1) diagnostic and therapeutic services for medical diagnosis, treatment and care of injured, disabled, or sick persons, or rehabilitation services for injured, disabled, or sick persons; or (2) psychiatric services for the diagnosis and treatment of mentally ill persons; or (3) medical services for the diagnosis and treatment of tuberculosis.

Where the physicians' services rendered are both for a psychiatric condition and one or more non-psychiatric conditions, it is necessary for the Part B carrier to separate the charges for the psychiatric aspects of treatment from the charges for the non-psychiatric aspects of treatment. However, in any case in which the psychiatric and non-psychiatric components are not readily distinguishable, all of the charges will be allocated to the primary diagnosis.

If from the medical information furnished it is the Part B Medicare carrier's judgment that the primary diagnosis for a particular service is the same as, or equivalent to, a condition described in the APA's *Diagnostic and Statistical Manual—Mental Disorders*, the charge for the service will be subject to the benefit limitation in connection with the diagnosis and treatment of a "mental, psychoneurotic or personality disorder."

Where it is not clear whether the primary diagnosis reported by the physician meets the definition, or if no physician's diagnosis is given, it will be necessary to contact the physician to clarify the diagnosis.

It is interesting to note that the APA's *Diagnostic and Statistical Manual—Mental Disorders* includes such diagnoses as: reactive depression, chronic anxiety state, chronic brain syndrome, depressive reaction, alcoholism, drug addiction, personality disorders, emotional instability, and anxiety reactions, within the definition of the term "mental, psychoneurotic, and personality disorders." In some instances it may be that these diagnoses are merely minor manifestations of some underlying disease; however, without sufficient medical information to identify the primary condition, the psychiatric limitation would apply.

CANCER TRENDS—(*Continued from page 666*)

ative study now in progress. If benefit is demonstrated it will probably be manifest in overall cure rate rather than in effectiveness of local control since local recurrence after laryngectomy is unusual.

Despite these apparent differences in management sited, the actual treatment plan for patients in the head and neck cancer program at MCV is quite similar to that reported here. Those differences that have developed are related to differing interpretation of information reported by others. Continued surveillance of results of treatment in the objective fashion reported here will certainly aid in the resolution of these minor differences in treatment plan.

W. L.

MENTAL HEALTH—(*Continued from page 674*)

But the plea is made, since Virginia has received national recognition regarding VTCC and its work, that the long labors of many of its citizens in establishing a children's psychiatric hospital not be sacrificed by the real estate and political expediences of the moment.

Summary

In summary, we have tried to highlight the aims and operations of the VTCC in its eight years of existence, pointing out some of the successes and partial successes, as well as directing attention to some "trouble" areas that need prompt attention. Their solutions need not be difficult.

Woman's Auxiliary....

"This Past Year

. . . has been one of the most interesting years of my life. With grateful heart I feel that the Virginia medical auxiliaries have reached many goals during the 1969-1970 year", stated Mrs. Joseph M. Straughan, President. The theme itself "Better Health, A Better Virginia, A Better World" broadened auxiliary horizons from which all benefited indirectly. The "mini workshop" at the 1969 convention gave special emphasis to projects under AMAERF, health careers, children and youth and mental health. The auxiliary response in all of these committees has been strong and rewarding. AMAERF exceeded its record contribution of the previous year by more than $100. The State memorial fund is helping two health career students. The Medical Society aided us financially in purchasing the film "A Trip to Where". This film along with our other film "LSD" is continuing our campaign against drug abuse through scheduled appearances. The mental health chairman announced the approval by our advisory board for plans by which local auxiliaries, with local advisory board approval, could sponsor workshops for parents.

May Straughan with her "delightful travelling companion", Mrs. Reuben F. Simms, president-elect, represented Virginia at the Woman's Auxiliary to the Southern Medical Association in Atlanta, the Woman's Auxiliary to the American Medical Association in Chicago, and the Woman's Auxiliary to the West Virginia Medical Association in White Sulphur Springs. Twenty-one Virginia auxiliaries enjoyed a visit from May Straughan and Grace Simms. They are charming representatives and encouraged the members, made helpful suggestions and brought new ideas forth for all to consider. This year has been highlighted by many auxiliary "firsts". Many have been featured in these articles. "The cooperation of our board members, a capable and willing group, has made this year easy for me. I especially thank those who gave more time, so willingly, to attend several meetings as our representatives when I was unable to be present. These meetings included mental health committee meetings in Richmond and in Roanoke, the President's Committee for Women in Service to the Handicapped and others. My appreciation is also extended to Reuben and Grace Simms who have been gracious hosts and friends. They have let me make their home my 'auxiliary home away from home'. Bless them both!" conveyed May Straughan.

Editorial . . . .

The Metamorphosis of the V.D.A.

THE MEETING of the Virginia Diabetes Association on May 8 was highly significant—but not just for its scientific program (which was outstanding), because the V.D.A. consistently presents excellent programs. The significant event occurred during the business meeting, when the V.D.A., hitherto just a small congenial group of physicians interested in diabetes, voted to open its doors to lay members on an equal basis with the professionals. Thus, like the Virginia Cancer Society and the Virginia Heart Association before it, the V.D.A. takes a long step toward becoming a voluntary health agency.

The gist of it is that any interested person who applies may become a general member of the V.D.A., either directly or through membership in one of the active chapters: Charlottesville, Norfolk, Richmond, or Roanoke. Physicians are encouraged to enroll first as general members, then to seek membership in the professional section. All general members are eligible for election to any office in the V.D.A., including the presidency.

Admittedly, this action did not arise from some endogenous excess of egalitarianism. Our parent group, the American Diabetes Association, has been evolving similarly over the past decade, and the V.D.A. merely adopted a model set of bylaws prepared by the A.D.A. Nevertheless, except for Mississippi, Virginia is the first state affiliate group to take this step. As part of the vanguard the V.D.A. will accept whatever praise or blame may accrue from such a position, but hopes that other state affiliates will follow its lead.

On the national scene, the American Diabetes Association is making preparations for intensive fund-raising activities, a function traditionally performed best by non-physicians. These funds are sought not to establish an empire but to make a realistic response to the multiple needs and problems of the diabetic segment of our population, which needs all the help it can get. Its numbers are increasing daily while at the same time the commitment of Federal funds is being cut back. Funds derived from the private sector are therefore needed to advance the goals of the American Diabetes Association:

> "To develop educational methods designed to give those who have diabetes mellitus a better understanding of their condition;
>
> "To promote among physicians and others the free exchange of knowledge with respect to diabetes mellitus; to improve the standards of treatment of diabetes mellitus;
>
> "To disseminate accurate information about diabetes mellitus to the general public; to educate the public in the importance of early recognition of diabetes mellitus and of medical supervision of its treatment;

"To promote research related to diabetes mellitus by individuals, hospitals, clinics, universities and other institutions or organizations;

"And to take such other measures and encourage such services as will enhance the welfare of individuals having diabetes mellitus."

These are also the goals of the Virginia Diabetes Association.

Virginia is not the largest State in the Union and the V.D.A. is certainly not now a large organization. But the challenge facing it is large indeed. Many diabetic patients dwell within our boundaries, and a number of them have experienced little or nothing in the way of a comprehensive on-going program for this most chronic of all chronic diseases. Research, and research opportunities, are not flourishing. We are fortunate in having two good diabetic camps for children this summer, but their fiscal basis is always a chancey thing. All these efforts require money and finding it has usually been both a tedious and an adventurous undertaking.

There is a tradition of excellent in the professional concern with diabetes in Virginia—exemplified so well by, among others, the late Henry B. Mulholland. To translate that tradition into practice is the goal of the Virginia Diabetes Association. To expedite the translation is the reason for its recent metamorphosis.

John A. Owen, Jr., M.D.
President, Virginia Diabetes Association

The MSV and RAM: 1820-1970

NINETEEN HUNDRED AND SEVENTY appears to be a vintage year for centennials and sesquicentennials. The Norfolk County Medical Society has just celebrated its 100th anniversary while The Medical Society of Virginia and the Richmond Academy of Medicine will have their joint Sesquicentennial during the State meeting in Richmond this October just about the time this issue of the journal will appear.

It is a little confusing for a state and a local society to have a common birthday but they did things differently 150 years ago. Their confreres around Boston, New York and Philadelphia to the north, and those in Charleston, to the south, had already formed medical societies but they had larger towns with more physicians to draw from in relatively smaller areas. Virginia, on the other hand, was essentially a rural State with few physicians within hailing distance of each other. Finally, according to the census in 1820, Richmond's population reached 12,000. The population was just about equally divided between whites and blacks. There must have been at least 17 recognized physicians in the Richmond area, for on December 15 they met and decided the time had come to have a society just as some of the adjacent cities had. They must have done little

else that evening for they did not elect officers until the next meeting in January when Dr. James McClurg was chosen president.

The members must still have been in an expansive mood after the holidays for instead of naming it the Richmond Medical Society or some other equally sensible name, they called it The Medical Society of Virginia. For the next 30 years this misleading name was a source of confusion to subsequent historians and the capitalization of *The* in the society's title has been a source of headache for physicians' secretaries, proof readers and printers ever since.

The society was incorporated in 1824, a medical library was established and the meetings were held in the Athenium scarcely a hundred yards from the present headquarters of the Richmond Academy of Medicine. Despite this auspicious beginning the society went into a decline in 1826 and nothing further was heard from it until 1841. The old constitution was then readopted, meetings were resumed, a number of out-of-town members joined and five years later an abortive effort was made to establish the society on a State-wide basis. The local members succeeded in holding off the insurgents until 1852, when the society, at long last, on April 27, became, as its name had always suggested, a State organization.

Dr. Beverley Randolph Wellford of Fredericksburg became the first president in the new Medical Society of Virginia at the 1852 meeting. He was then elected the sixth President of the American Medical Association when it met in Richmond in May of the same year. Two hundred and seventy-five delegates assembled in the Second Presbyterian Church on Fifth Street—a far call from the annual AMA meetings today in which its members can be accommodated in only four cities in the country. To take some of the sting away from having played a major role in divorcing the State from the municipal society, Dr. Wellford moved to Richmond in 1854 and became a member of the faculty of the Medical College of Virginia.

Not to be outdone by having their society pulled from beneath them, 44 local physicians on June 12, 1852, formed the Medico-Chirurgical Society of Richmond City. The name of the Richmond group underwent four different changes during the next 50 years as the result of sporatic internal difficulties, but praise be, the present name has remained the same during the past 60 years, thanks to the era of good feeling that now exists.

This then is the reason for the dual Sesquicentennial that will be observed at the annual meeting this fall. A colorful joint exhibit has been planned for the lobby of the John Marshall Hotel. This will review the activities of both societies. It is hoped that as many members possible from both organizations will attend the 1970 meeting so that they may see the exhibit and learn more about the history of their respective societies.

H. J. W.

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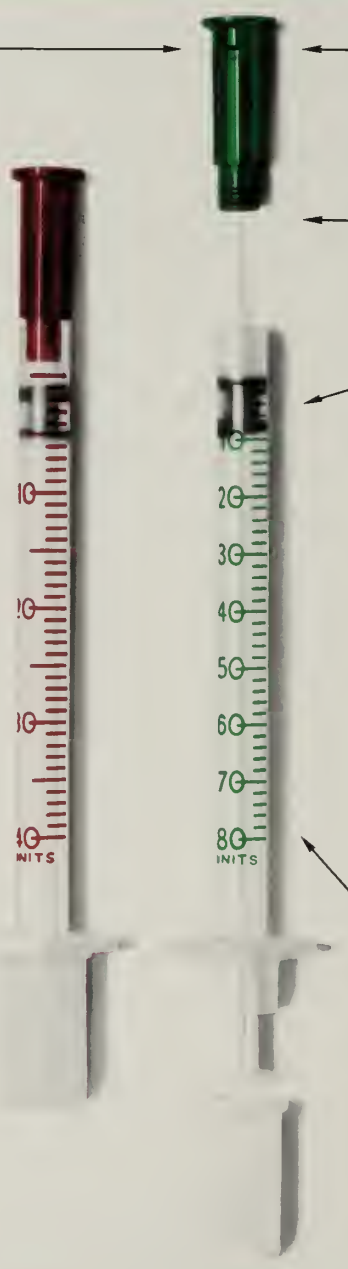
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News . . . .

Calendar of Events

Tennessee Valley Medical Assembly—Read House—Chattanooga, Tennessee—October 19-20, 1970.

American Cancer Society, Virginia Division—Annual Meeting—Hotel Jefferson—Richmond—October 21-22, 1970.

Thursday Afternoon Lectures—Sponsored by University of Virginia School of Medicine—Charlottesville—Through November 19, 1970.

Interstate Post Graduate Medical Association of North America—1970 Assembly—Palmer House—Chicago—November 2-5, 1970.

Symposium on Radiology and Nuclear Medicine—Presented by Department of Radiology, Memorial Hospital, Danville, and Department of Radiology, Duke University Medical Center—Memorial Hospital—Danville—November 4-6, 1970.

McGuire Lecture Series—Program Topic is "Burns"—Department of Continuing Education of Medical College of Virginia—Richmond—November 5-6, 1970.

Congress of County Medical Societies—Annual Meeting and Seminar on Private Practice—Netherland Hilton Hotel—Cincinnati, Ohio—November 6-8, 1970.

Virginia Hospital Association—Annual Meeting—The Homestead—Hot Springs—November 12-13, 1970.

American Heart Association—Scientific Sessions—Convention Hall—Atlantic City, New Jersey—November 12-15, 1970.

Pediatric Post Graduate Course—Problems in the Newborn Infant—University of Virginia School of Medicine—Charlottesville—November 13-14, 1970.

Southern Medical Association—Annual Meeting—Dallas, Texas—November 16-19, 1970.

American Medical Association—Clinical Session—Boston—November 29-December 2, 1970.

Asthma Conference—Sponsored by Continuing Education Program of the University of Virginia School of Medicine—Charlottesville—December 11, 1970.

National Conference on Cancer of the Colon and Rectum—Hotel del Coronado, San Diego, California—January 7-9, 1971.

Annual Medical Seminar—Sponsored by Continuing Education Program of University of Virginia School of Medicine—The Homestead—Hot Springs—February 17, 18, 19, 1971.

American College of Physicians, Virginia Section—The Homestead—Hot Springs—February 20, 1971.

Alton D. Brashear Post Graduate Course in Head and Neck Anatomy—Department of Continuing Education—Medical College of Virginia—Richmond—February 25-26, 1971.

Virginia Academy of General Practice—Annual Assembly—The Homestead—Hot Springs—March 10-14, 1971.

Roanoke Memorial Hospital Post Graduate Program—Roanoke—March 18-19, 1971.

New Members.

The following new members were received into The Medical Society of Virginia during the month of August:

Oscar Ramiro Aizcorbe, M.D., Falls Church
Herbert Lee Berry, M.D., McLean
Marvin Eugene Bloom, M.D., Arlington
John Gus Cametas, M.D., Richmond
Robert Sherman Creekmore, M.D., Roanoke
Fernando Gregorio Diaz, M.D., Gloucester Point
John Charles Dumler, Jr., M.D., Harrisonburg
Thomas Francis Flynn, M.D., Norfolk
Harold H. Golz, M.D., Kilmarnock
Marriott Conard Johnson, Jr., M.D., Fredericksburg
James Brady Kinlaw, M.D., Lynchburg
Peter B-H Lau, M.D., Gloucester Point
Joanna Cranston Maiden, M.D., Norton
William J. Munsie, M.D., Fredericksburg
Donald Charles Pryor, M.D., Virginia Beach
Chalon Rodriguez, M.D., Arlington
Hassan A. Salih, M.D., Springfield
Maurice John Vernon Smith, M.D., Richmond
William Anthony Steiger, M.D., Virginia Beach
Manuel Enfestan Tayko, M.D., Stuart
Jonathen A. Van Heerden, M.D., Winchester
William Budd Warden, M.D., Virginia Beach

Orient Adventure.

The first trip sponsored by The Medical Society of Virginia was a huge success. We had 167 passengers on the trip to the Orient, seven of them leaving with a group from Milwaukee on July 31st, and 160 leaving from Richmond on August 7th. Except for a slight delay in leaving Richmond, due to equipment difficulties, everything was just like clock-work, but not too oriented to be boring. All of our members and their families were free to do as they wished, once they reached Tokyo and Hong Kong. Most of them took advantage of the sidetrips and about half took the trip to Bangkok. There were no accidents or illnesses and everyone returned to Richmond tired but most enthusiastic over the success of the trip.

It is hoped that we may be able to have enough "candid camera" shots sent us to publish in an early issue of the Monthly (and there must have been some good ones).

The Medical Society of Virginia will soon decide if it will continue to sponsor these trips and, if so, what will be the destination for the next one.

Watch your mail—don't let your secretary throw this one away—because you might miss an opportunity of a super vacation for a very small cost!

New Commissioner of the Department of Mental Hygiene and Hospitals.

Dr. William S. Allerton, Falls Church, has been appointed by Governor Holton, as the new commissioner of the Department of Mental Hygiene and Hospitals, succeeding Dr. Davis. He took office on September 1st. Dr. Allerton has for the past three years been superintendent of the Northern Virginia Mental Institute.

Dr. Warren W. Koontz, Jr.,

Has been appointed professor and chairman of the Division of Urology at the Medical College of Virginia. He has been a member of the urology faculty since 1966.

Dr. W. T. Thompson, Jr.,

Richmond, spoke on Commercialization of the Medical Profession and Its Effect on Patient Care at the Third National Congress on Medical Ethics in Chicago, September 19-20.

Dr. Simon Rothberg

Has been appointed research professor of dermatology at the Medical College of Vir-

ginia. He was formerly associated with the National Institutes of Health at Bethesda, Maryland, and has held chemical-biochemical research posts with the National Heart Institute's Laboratory of Metabolism and National Cancer Institute, General Medicine Branch.

McGuire Lecture Series.

The forty-second annual McGuire Lecture Series will be held at the Medical College of Virginia, November 5-6. The subject for this Series is The Treatment of Burns. The McGuire lecturer will be Dr. Curtis Price Artz, Professor and Chairman, Department of Surgery, Medical University of South Carolina, Charleston. He will speak on Initial Replacement Therapy in Severe Burns and Management of Burn Wound. Others on the program are: Dr. Boyd W. Haynes, Jr., on Fluid Replacement in the Burned Child; Dr. John F. Burke on Colloids vs. Sodium; Dr. John M. Kinney on Energy Requirements; Dr. John A. Moncrief on Tracheostomy, Indications and Technique; Dr. Robert A. McCormack on The Burned Hand; Dr. Douglas McG. Jackson on Electrical Burns; Dr. Newton C. Brackett, Jr., on Renal Complications; Dr. James P. Baker on Pulmonary Complications; Dr. Moncrief on Sulfamylon; Dr. Burke on Silver Nitrate; Dr. David M. Hume on Immunologic Basis for Skin Transplantation; Dr. Basil A. Pruitt on Homograft and Heterograph; Dr. Bruce G. McMillan on Antibiotic Therapy; Dr. Jackson on Office Treatment; Dr. McCormack on Joint Contracture — Prevention and Treatment. Drs. Brackett, Burke, Jackson, Kinney, McCormack, McMillan, Moncrief, and Pruitt are members of the Guest Faculty, and Drs. Baker, Haynes and Hume are from the Medical College of Virginia Faculty.

Roanoke Academy Attacks the Drug Issue.

The Roanoke Academy of Medicine is taking an active role in a community effort to stamp out drug abuse. The Academy plans to aim its full force of organized medicine at the problem and has formed an alliance with local youth, civic leaders and public health officials. One committee will work with TRUST, a new youth-oriented agency born on the Hollins College campus. TRUST is manned by college students who have received special training and officially opened on September 14th. It hopes to become fully established as the contact station for young people with drug problems and drug questions. The Academy committee expects to have about thirty doctors who will take turns being on call when TRUST makes contact with a boy or girl ready to cry Uncle. Another committee is looking to the establishment of a full-scale detoxification center—possibly tagging the emergency room of one of the hospitals as a major drug crisis center. A Methadone maintenance project is being studied —possibly with a special hospital ward designated for the exclusive use of addicts as they come undone. Also being considered is the enlistment of interns for service with young drug addicts. Academy members are working closely with three task forces set up by a newly organized drug abuse coordination committee under the Roanoke Mental Health Association. Doctors are at work on all aspects of the problem, not the least of which is how to make help available and stay within the laws.

For many doctors interested in helping to wage the fight, a first step will be getting hip to the whole scene. New drug kicks and new ways to turning on to old drugs happen almost faster than an individual doctor can keep up.

Emergency Room Physician.

World's largest resort city seeks full time Emergency Department physician for 190-bed accredited general hospital, providing a minimum guaranteed income, expected to

be exceeded the first year. This coastal Virginia city offers excellent living conditions and recreational facilities. Contact W. Earl Willis, Administrator, General Hospital of Virginia Beach, Virginia Beach, Virginia. (*Adv.*)

Physicians Wanted.

Full time coverage in active emergency room of 191-bed, accredited hospital in the beautiful Shenandoah Valley of Virginia. Guaranteed annual income. Contact Administrator, King's Daughters' Hospital, Staunton, Virginia 22401. (*Adv.*)

Wanted.

Full time staff physician for Student Health Service at Virginia Polytechnic Institute, Blacksburg. For further information, write or call Emory R. Irvin, M.D., Blacksburg 24060. Phone 552-6444. (*Adv.*)

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Obituary . . . .

Dr. William Durwood Suggs,

Richmond, died August 26, having been in ill health for some time. He was sixty-six years of age and a graduate of the School of Medicine of the University of Pennsylvania in 1929. Dr. Suggs began his practice in Richmond in 1933 and was a member of the staff of Stuart Circle Hospital, where he limited his practice to Obstetrics and Gynecology. He had been a member of The Medical Society of Virginia for thirty-seven years.

Dr. Suggs is survived by his wife and a daughter.

Dr. George Washington Skaggs,

Dublin, died August 2, after an illness of several weeks. He was eighty-eight years of age and a graduate of the Medical College of Virginia in 1908. Dr. Skaggs had practiced medicine for sixty-two years and was still in active practice at the time of his death. He had been in Dublin since 1934 and served as a medical advisor to the Pulaski County Selective Service Board. Dr. Skaggs was a Mason and a member of several medical organizations. He had been a member of The Medical Society of Virginia since 1935.

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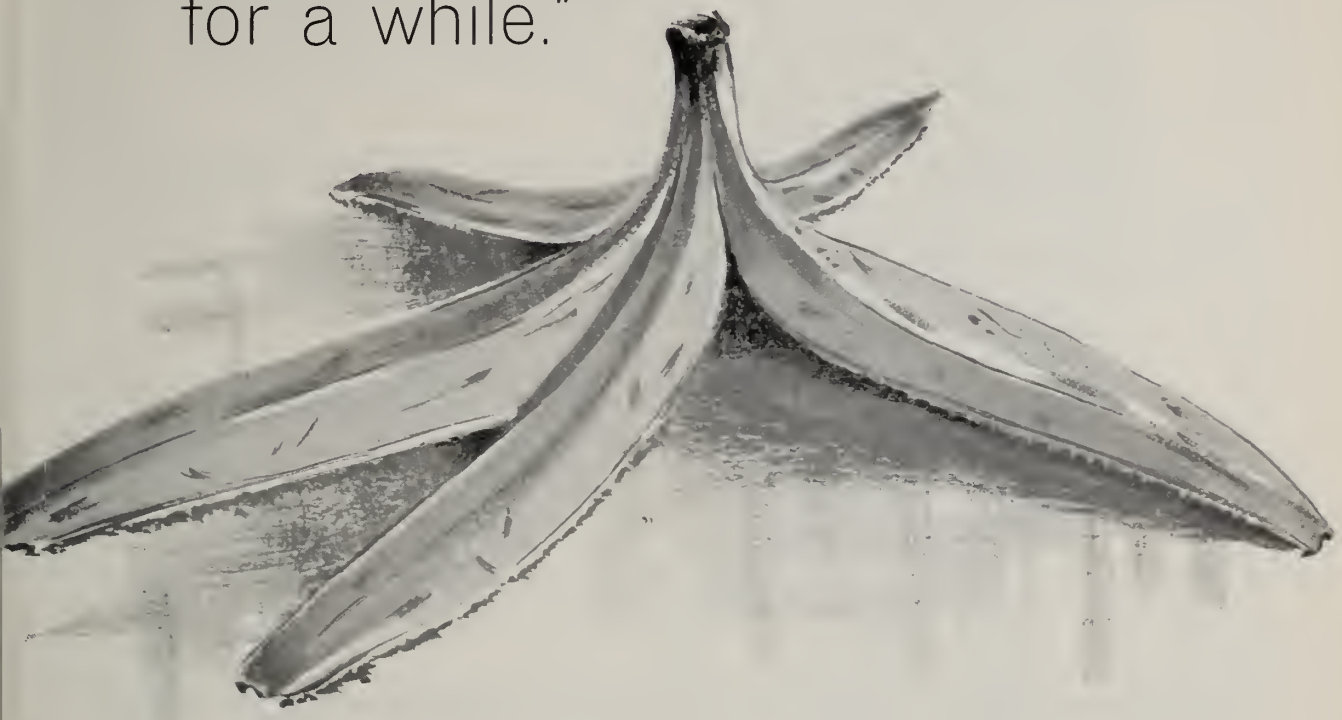
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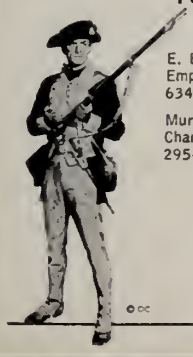
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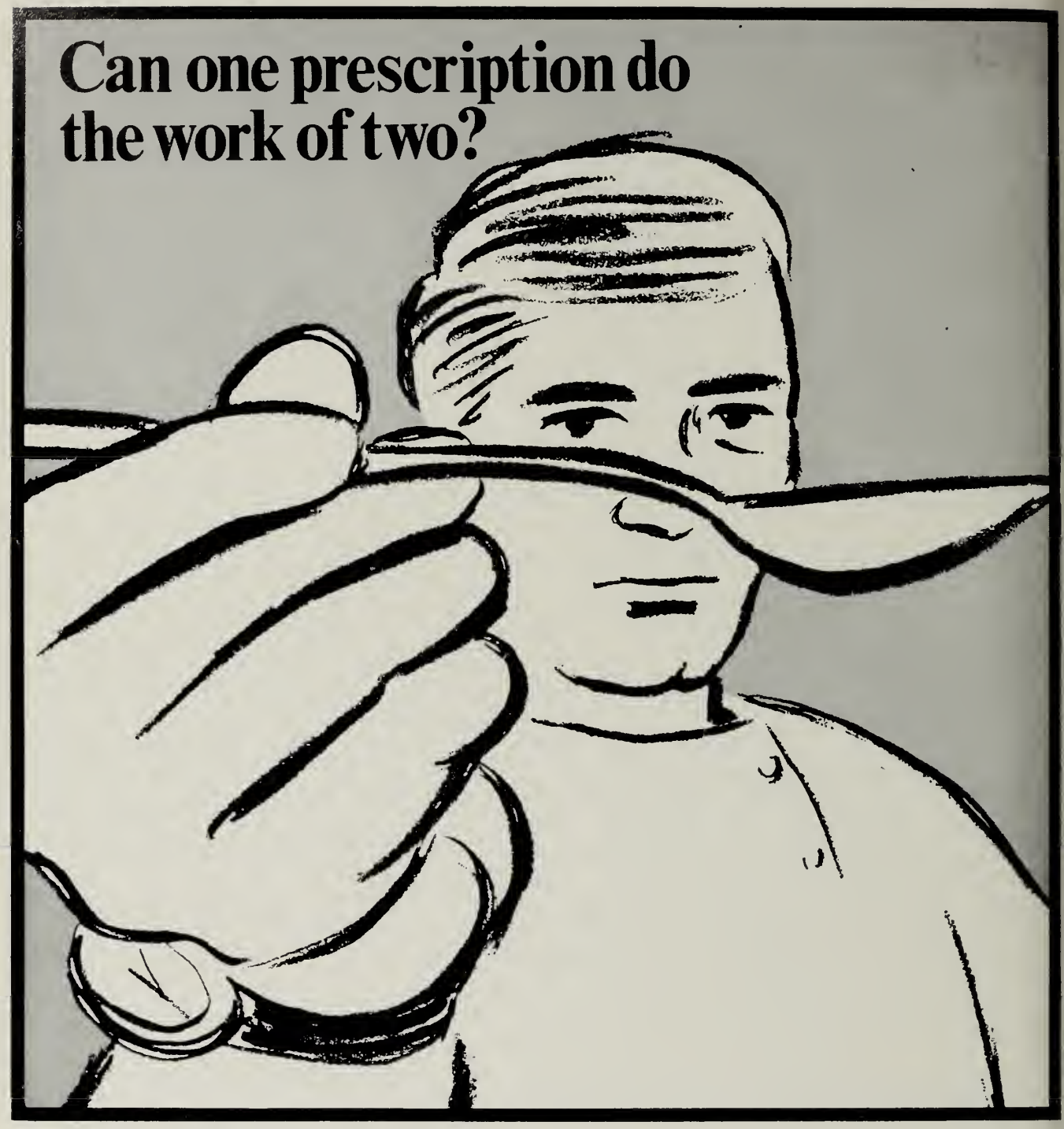
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TABLETS & GRANULES

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■ for fever blisters and canker sores of herpetic origin

Introduced to help reestablish the normal physiology of the intestinal tract in gastrointestinal disturbances[1], particularly diarrheas (including those resulting from antibiotic therapy), Lactinex is also useful for reestablishing the flora following bowel surgery, infant colic, mucous colitis, foul-smelling stools, pruritus ani, flatulence and hives.[2,3,4,5,6]

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References:
(1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: NY State Jour. Med., 58:2672-2673, August 1958. (6) Ellis, S. and Spratt, J. S.: JOUR. AMER. GER. SOC., 18:410-415, May 1970.

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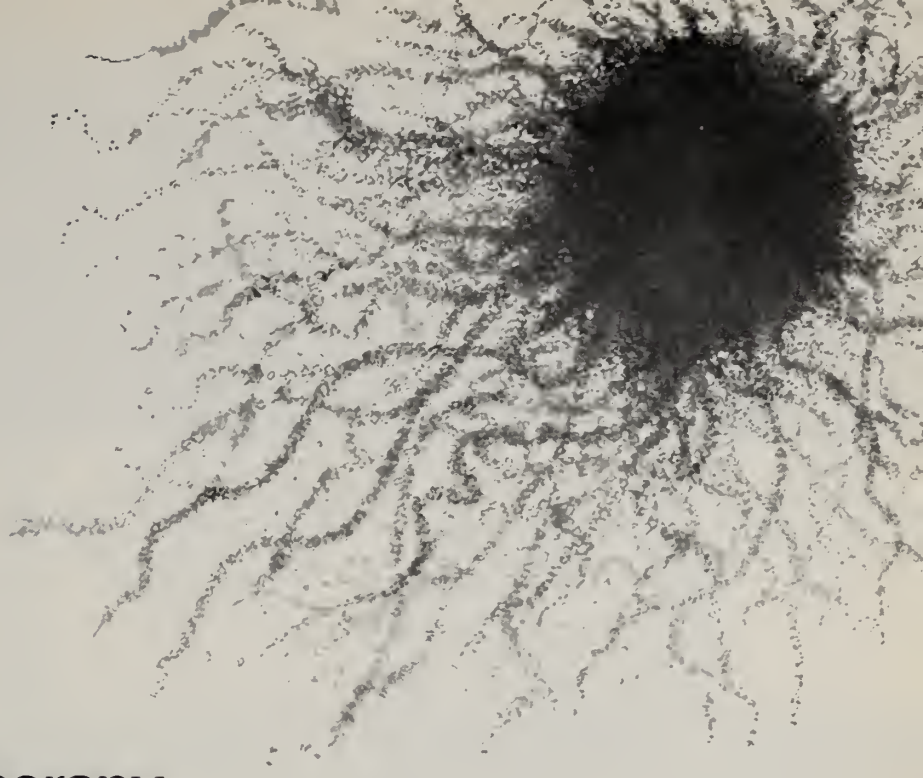
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Corticosteroid therapy week after week.

then antibiotic therapy last week.

and monilial overgrowth this week.

For many patients on long-term corticosteroid therapy, the addition of oral antibiotic therapy may trigger monilial overgrowth in the intestine. When you anticipate such a problem, take action with DECLOSTATIN 300. It combines the broad-spectrum potency of demethylchlortetracycline with the antifungal effectiveness of nystatin—it helps avoid monilial take-over. Experience has shown DECLOSTATIN to be highly useful for many women patients; individual culture studies will show exactly where this usefulness may best be applied.

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Contraindication. History of hypersensitivity to demethylchlortetracycline or nystatin.

Warning In renal impairment, usual doses may lead to excessive accumulation and liver toxicity Under such conditions, lower than usual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable A photodynamic reaction to natural or artificial sunlight has been observed Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects. Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes, a rare case of exfoliative dermatitis has been reported Photosensitivity, onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans

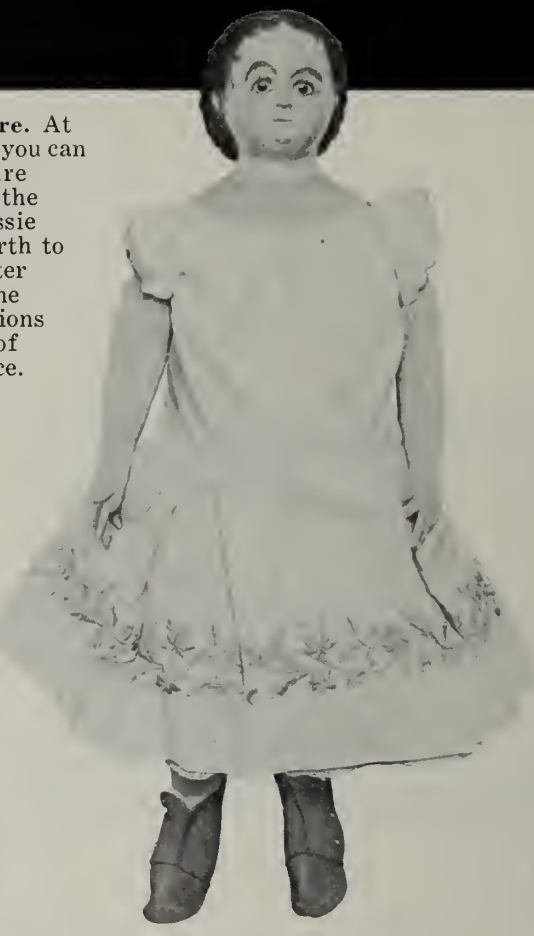
Average Adult Daily Dosage: One tablet b i d Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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Virginia has a romantic past. And lots of mementos to prove it.



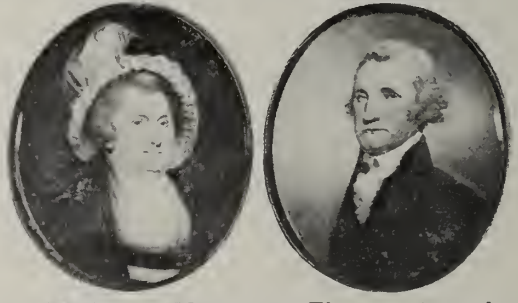
Woodrow Wilson Slept Here. At Staunton's stately "Manse", you can see the crib that held a future president. And the home where Jessie Wilson gave birth to the son who later gave birth to the League of Nations with its vision of world-wide peace.



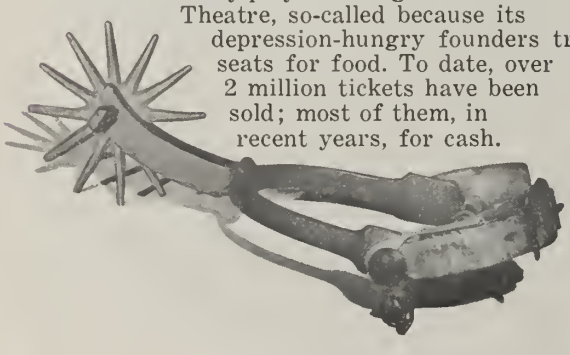
The General's Assembly. Douglas MacArthur called Norfolk home, though he was born in Arkansas ("while his parents were away", the Norfolk paper said). Here, at the MacArthur Memorial, you can see the possessions of this great soldier.



The Doll Who Spied For Dixie. She had a head for smuggling. Hollow. Just right for carrying medicines across Union lines. She's at Richmond's Confederate Museum now. In retirement.



The Mighty In Miniature. These water color miniatures of the first President and his lady, painted from life, are now on view in Williamsburg. Come see them.



Broadway In The Blue Ridge. These spurs were worn in an early play at Abingdon's Barter Theatre, so-called because its depression-hungry founders traded seats for food. To date, over 2 million tickets have been sold; most of them, in recent years, for cash.

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*Slanger, A.: Med. Times *94*:150 (Feb.) 1966.

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Roche announces

Efudex®

(fluorouracil) cream/solution

for the treatment of solar/actinic keratoses... a topical alternative to conventional therapy

1/22/68—Treatment with 5% 5-FU cream commences. Patient K.L. showing widespread but mild solar keratoses (also known as actinic keratoses).



Fluorouracil—the Roche contribution

In 1962, Roche Laboratories introduced Fluorouracil Roche® (5-fluorouracil). Early clinical work with this drug suggested that it possessed a selective cytotoxic activity when applied topically to certain kinds of lesions. Based on this work and years of clinical trials, a standardized form of topical fluorouracil can now be recommended for treatment of multiple solar or actinic keratoses.

Efudex®(fluorouracil)—a new alternative to conventional therapy

Efudex presents the physician with a topical alternative to surgery in the treatment of solar or actinic keratoses. It is effective, comparatively inexpensive and especially well-suited for treatment of multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective on first and later applications

In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When lesions did recur or new ones appeared, repeated courses of Efudex therapy proved effective.*

/2/68—After 11 days of treatment. rythema is seen at site of keratoses. In ddition, numerous lesions not apparent rior to therapy have become manifest y sharply defined reactions. Intervening kin, also treated, shows no response to ıerapy.

/19/69—One year after cessation of ıerapy. Skin appears clear with no evi- ence of scarring. Examination reveals ıck of recurrence or the formation of ew lesions.



Predictable sequence of therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of the keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two to three months before gradually receding.

Selective—with a high degree of safety

Despite the temporary unsightliness and discomfort of the inflammatory episode, Efudex is, in general, more readily tolerated than surgery. Clinical work shows the intense inflammatory response to be limited to the area of the lesion. Normal skin is not similarly affected. Another measure of Efudex safety: systemic absorption of topical fluorouracil was insignificant, indicating a low risk of systemic toxicity.*

Two strengths—two convenient dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, there are two important considerations. First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

2% and 5% Solutions; 5% Cream Applied twice daily—resolves solar or actinic keratoses.

new Efudex® (fluorouracil) cream/solution



For full prescribing information, please see the following page.

Roche introduces

Efudex®

(fluorouracil) cream/solution the new standardized topical for solar/actinic keratoses

Description: Efudex solutions and cream are topical preparations containing the fluorinated pyrimidine 5-fluorouracil, an antineoplastic antimetabolite.

Efudex Solution consists of 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris-(hydroxymethyl) aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream contains 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Actions: There is evidence that the metabolism of fluorouracil in the anabolic pathway blocks the methylation reaction of deoxyuridylic acid to thymidylic acid. In this fashion fluorouracil interferes with the synthesis of deoxyribonucleic acid (DNA) and to a lesser extent inhibits the formation of ribonucleic acid (RNA). Since DNA and RNA are essential for cell division and growth, the effect of fluorouracil may be to create a thymine deficiency which provokes unbalanced growth and death of the cell. The effects of DNA and RNA deprivation are most marked on those cells which grow more rapidly and which take up fluorouracil at a more rapid pace. The catabolic metabolism of fluorouracil results in degradative products (*e.g.*, CO_2, urea, α-fluoro-β-alanine) which are inactive.

Studies in man with topical application of ^{14}C-labeled Efudex demonstrated insignificant absorption as measured by ^{14}C content of plasma, urine and respiratory CO_2.

Indications: Efudex is recommended for the topical treatment of multiple actinic or solar keratoses.

Contraindications: Efudex is contraindicated in patients with known hypersensitivity to any of its components.

Warnings: If an occlusive dressing is used, there may be an increase in the incidence of inflammatory reactions in the adjacent normal skin.

Prolonged exposure to ultraviolet rays should be avoided while under treatment with Efudex because the intensity of the reaction may be increased.

Usage in Pregnancy: Safety for use in pregnancy has not been established.

Precautions: If Efudex is applied with the fingers, the hands should be washed immediately afterward. Efudex should be applied with care near the eyes, nose and mouth. To rule out the presence of a frank neoplasm, a biopsy should be made of those areas failing to respond to treatment or recurring after treatment.

Adverse Reactions: The most frequently encountered local reactions were pain, pruritus, hyperpigmentation and burning at the site of application. Other local reactions included dermatitis, scarring, soreness and tenderness.

Also reported were insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity and lacrimation.

Laboratory abnormalities reported were leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Efudex should be applied twice daily with a nonmetal applicator or suitable glove in an amount of the solution or cream sufficient to cover the lesion. When Efudex is applied to a lesion, a response occurs with the following sequence: erythema, usually followed by vesiculation, erosion, ulceration, necrosis and epithelization. The lower frequency and intensity of activity in adjacent normal skin indicate a selective cytotoxic property. Medication should be continued until the inflammatory reaction reaches the erosion, necrosis and ulceration stage, at which time use of the drug should be terminated. The usual duration of therapy is from 2 to 4 weeks. Complete healing of the lesion may not be evident for 1 to 2 months following cessation of Efudex therapy.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Clinical Studies: The effectiveness of the three preparations as determined by complete involution of solar keratoses was: 2% Solution, 77% of 282 lesions; 5% Solution, 88% of 202 lesions; and 5% Cream, 85% of 189 lesions. In those lesions where complete involution followed treatment, the rate of possible recurrences observed clinically at periods up to 12 months or more was: 2% Solution, 4.6% of 218 lesions; 5% Solution, 1.7% of 177 lesions; and 5% Cream, 5.6% of 160 lesions. Because of the toxic potential of fluorouracil, some physicians preferred to use the 2% solution when large areas were to be treated. Approximately 30% of the lesions required treatment for two weeks or less; approximately 78% required four weeks or less for adequate treatment.

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Which is one more reason why BUTISOL Sodium is the Rx that says "relax." To the doctor, too.

*Based on surveys of average daily prescription costs.

Contraindications: Porphyria or sensitivity to barbiturates. *Precautions:* Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression. *Adverse Reactions:* Drowsiness at daytime sedative dose levels, skin rashes, "hangover" and systemic disturbances are seldom seen. *Warning:* May be habit forming. *Usual Adult Dosage:* For daytime sedation, 15 mg. to 30 mg. t.i.d. or q.i.d. For hypnosis, 50 mg. to 100 mg. *Available as:* Tablets, 15 mg., 30 mg., 50 mg., 100 mg.; Elixir, 30 mg. per 5 cc. (alcohol 7%). BUTICAPS® [Capsules BUTISOL Sodium (sodium butabarbital)] 15 mg., 30 mg., 50 mg., 100 mg.

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Guest Editorial....

"—And So Ad Infinitum Federal Rules and Regulations

REGULATIONS concerning Federal health programs are distributed by two main channels. One is by specific directives to carriers administering various aspects of the programs. Through two such directives from Thomas M. Tierney, Director of the Bureau of Health Insurance, the so-called "fee freeze of Medicare" came into being. Generally, these "in house" directives specify administrative procedures to be used to carry out existing regulations. New regulations, or alterations of those already in force, on the other hand, are generally published first in the daily Federal Register. These regulations are the rules drawn up by that agency of the Federal government designated by Congress to carry out a given law. Often, proposed regulations or changes are presented with a request to interested parties to submit to the agency comments, views, or objections within a period of 30 days after initial publication. After such comments are evaluated, the proposal, changed or unchanged, is adopted and published again in final form in the Federal Register. The AMA and various other interested parties frequently do present their views during these periods.

These rules and regulations are gradually changing the face of American medicine. Such terms as certification and recertification, usual and customary and prevailing fees, and utilization review, were heard rarely before the days when Medicare first inserted the Federal government into the mainstream of the private practice of medicine. Now they are used frequently, if not happily, by all physicians. To some extent at least, the definitions and interpretations of these and other new terms may influence many of our professional decisions.

One of the most important of these HEW directives was published in the Federal Register of October 29, 1969. Entitled, "Post-Hospital Extended Care-Definitions for Purposes of Reimbursement", these regulations define and describe "skilled nursing care" and "skilled nursing care on a continuing basis" in the post-hospital extended care facility. They are, therefore, the official definitions of what will and will not be acceptable for payment by Medicare for extended care facility patients.

These regulations are apparently designed for non-professional interpretation, so that lay investigators can decide whether or not ECF care is required for a given patient. Thus, the Utilization Review Committee of an ECF can be effectively bypassed and decisions regarding need for care left to non-physicians. Apparently this is already taking place, even here in Virginia.

Post-hospital extended care is defined as that level of care provided after a period of intensive hospital care to a patient who continues to require *skilled nursing* services *on a continuing* basis, but who no longer requires the constant availability of medical services provided by a hospital.

A skilled nursing service is defined as one which must be furnished by or under direct supervision of licensed nursing personnel to assure the safety of the patient and achieve the medically desired results. Skilled nursing includes assessment of total patient needs, planning and management of a treatment plan, and rendering direct patient services.

Direct skilled patient *services* include intramuscular and intravenous injections, intravenous feedings, oral administration of medications with significant side effects requiring immediate recognition and treatment, Levine tube and gastrostomy feedings, nasopharyngeal aspiration, catheter insertion, application of dressings involving prescription medications and asceptic techniques, treatment of extensive decubiti, initiation of a regimen involving medical gasses, heat treatment requiring skilled personnel for evaluation, etc.

Whether or not a given service should be considered as skilled or unskilled *nursing care* would be based primarily on the *technical or professional training required to effectively perform or supervise* the service. Services such as physical therapy, frequent position changes to avoid decubiti, administration of less noxious drugs, etc., would not necessarily require *skilled nursing care*. Non-skilled services requiring skilled performance or supervision could be classified as requiring skilled nursing care, however. For example, the nursing requirements of a bedfast patient with a cast would be considered unskilled; if the problem were complicated by a need for special traction or by a skin infection, skilled nursing care might be required. In such cases, the complications requiring skilled care must be thoroughly documented.

Supportive or unskilled services which can be learned and performed by non-medical personnel (in the absence of complications requiring skilled performance or supervision) would include the administration of "routine" oral medications; "routine" services in connection with catheters, ileostomies, colostomies, etc.; changes of non-infected dressings,

treatment of incontinence with diapers, etc.; general maintenance in connection with plaster casts, braces, etc.; supervision of exercises previously taught the patient, administration of medical gasses after the initial phase of instituting treatment; assistance with dressing, eating, toilet use; the use of heat for palliation and pain relief, etc.

Skilled nursing services are required on a *continuing basis when the continuous presence of skilled nursing personnel is warranted.* Whether continuing care is required is based on the need for *frequency* of skilled nursing services rather than regularity of such service. For example, intravenous injections given every other day, would not alone justify *continuous* skilled nursing care. Continuous *observation* would require skilled care only if symptoms requiring immediate treatment could be expected to occur (i.e., sudden worsening of heart failure in chronic arteriosclerotic heart disease).

Here for the first time, the current thinking of the SSA on what will and will not be covered in Extended Care Facilities is spelled out, and a precise definition of what is to be considered as justification for post-hospital extended care is provided. Because of the application of these regulations to the every day practice of most physicians, they should be carefully studied. As the AMA has noted, the onerous task of explaining to patients their ineligibility for "covered" extended care facility services is falling with increasing frequency on the individual physician.

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Clinical Correlations with Coronary Arteriography

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The description of chest pain, the electrocardiographic findings, and the associated "risk factors" of age, smoking, and serum cholesterol were related to the anatomical findings at coronary arteriography in 89 subjects. The diagnostic value of a classically anginal pattern of pain and the significance of the risk factors were again demonstrated. When chest pain was not exclusively and typically anginal, many patients did not have coronary stenoses. As previously suggested by others, inadequate cardiac acceleration despite the completion of a prescribed standard, exercise stress appeared to be a cause of frequent, falsely negative results in post-exercise electrocardiograms, although further exercise to nearly maximal levels did not always elicit EKG abnormalities in patients with stenoses.

THE USE OF CORONARY ARTERIOGRAPHY has in general supported the familiar association between the symptom of anginal chest pain and the existence of coronary arteriosclerosis. Visualization of the coronary arteries during life has, however, also introduced the possibility of new clinical entities in heart disease, such as non-arteriosclerotic myocardial ischemia[1,2] and non-arteriosclerotic conduction abnormalities.[3] While the frequency, mechanism, and significance of these disorders remain to be demonstrated, the practicing physician needs to know the approximate predictive accuracy of his routine diagnostic tools—the history, electrocardiograms at rest and after a standard exercise test, and the significance of so-called "risk factors"—in identifying patients with coronary arteriosclerosis. When these several diagnostic approaches all point towards coronary disease, coronary angiography will often be unnecessary; when the cumulative evidence is

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uncertain, angiography will have its greatest value in determining a patient's further management. We reviewed the description of pain, the electrocardiograms, and some of the "risk factors" in 89 patients who had technically satisfactory coronary arteriograms in order to assess their diagnostic value.

Materials and Methods

Clinical histories were recorded on these patients both by the medical house staff and members of the cardiology division prior to arteriography, and each patient was classified as having had "true angina" only, or "angina and atypical chest pain", or "atypical chest pain" only. The designation of "angina" was applied to patients whose pain had some combination of the features of constricting quality, radiation to arm or neck, precipitation by exercise, and the absence of characteristics of other causes of chest pain. "Atypical chest pain" designated those whose pain did not conform to that pattern, being often sudden or lancinating in character or varied in location, or of inconsistent duration and precipitation. Since there was not always perfect agreement among the evaluating physicians prior to arteriography about which category each patient fitted, and several of these patients had symptoms of both angina and non-anginal chest pain, there was a third category with both symptoms.

Routine electrocardiograms were available in all patients at rest, and post-exercise tracings after a standard "Master double stress" were obtained in those whose clinical status and pre-exercise EKG permitted this. (Minor abnormalities in a resting electrocardiogram did not prevent the performance of an exercise test, if the patient was not taking digitalis.) Any exercise test was considered abnormal only if there developed 0.5 mm of horizontal, isoelectric displacement of the ST segment of 0.08 sec. duration below the baseline level.[4]

The selective coronary arteriograms were performed by members of the Department of Radiology using a modified Seldinger technic of percutaneous puncture of a femoral artery.[5] Polyethylene catheters were utilized for injection of diatrizoate methylglucamine (Renografin 60 or 76%). Serial, bi-plane x-ray films were obtained during the injection at a rate of two films per second.

Grading of arteriographic stenoses was done independently by two different reviewers, at least one of whom was not familiar with the clinical history. Each major vessel—right coronary, left main coronary, left anterior descending, and left circumflex artery—was graded in terms of the absence of stenosis, insignificant plaque formation, stenosis of more than 50% of lumen diameter, or total occlusion. For the purposes of this study, patients were classified as having "normal" arteriograms if they had no narrowing or only minor irregularities of vessel wall comprising less than 50% stenosis of the lumen of a single vessel. "Abnormal" arteriograms included more severe narrowing of one or more vessels, or minor stenoses in more than one vessel.

Results

Selective arteriography in these 89 patients revealed 43 patients without significant coronary pathology and 46 patients with significant stenoses. Table I shows, not surprisingly, that the patients with abnormal arteriograms were slightly older, smoked more, had higher serum cholesterols, and somewhat higher post-prandial blood sugars. The difference in blood sugar was not statistically significant ($p = <0.1$), perhaps due to inadequate sampling. The difference for cigarette consumption was significant, both in terms of non-smokers, as given in

Table I, and in terms of average number of cigarettes per day. The average number of cigarettes smoked in the group with normal arteriograms was 14.7 ± 13.5 and in the abnormal group was 21.7 ± 13.9, a difference with a t-test of 2.3 and p-value less than 0.05.

arteriograms despite the fact that their pain was sometimes considered to be anginal.

Table III summarizes the relation between arteriographic findings and the electrocardiogram. The fact that 13 of the 43 patients with normal anatomy, listed in the left column, had abnormal resting electrocardio-

TABLE I

Risk Factors Related to Arteriogram Results
Coronary Arteriograms

	Normal (43)		Abnormal (46)			
	# obs.	Mean ± S. D.	# obs.	Mean ± S. D.	t—test	p—value
Age	43	42.9 ± 7.8	46	49.7 ± 7.1	4.5	<0.01
Number of non-smokers..	43	14	46	6	*	<0.05
Serum cholesterol	42	234 ± 56.7	42	278 ± 58.5	3.5	<0.001
Post-prandial blood sugar	15	139 ± 41.1	16	164 ± 45.6	1.6	<0.1

*Smokers treated as qualitative data, χ^2-5.02, p <0.05.

Table II summarizes the accuracy of the clinical history as elicited by the physicians of our medical center in terms of predicting the presence or absence of coronary pathology. If the description of the pain was classically anginal, as was true in 39 of these patients, the probability of finding an ab-

grams serves only as a reminder to the clinician that there are causes of abnormal electrocardiograms other than coronary artery disease. Thirty-one patients in this group underwent standard double Master's tests. In these anatomically normal patients there were six abnormal or falsely positive

TABLE II

Outcome of Coronary Arteriograms as Related to Symptoms

	Coronary Arteriograms	
	Normal (43)	Abnormal (46)
True angina	5	34
Atypical chest pain only	18	0
Angina + atypical chest pain	20	12

normal arteriogram was very high; the opposite was true in the 18 patients describing only atypical chest pain. On the other hand, we encountered a relatively large group of 32 patients in whom either both types of pain were clearly described, or in whom physicians could not agree as to the character of the pain. In this situation no marked trend in terms of anatomy was found, except that the majority had normal

TABLE III

Outcome of Coronary Arteriogram as Related to ECG

	Coronary Arteriogram	
	Normal (43)	Abnormal (46)
ECG at rest		
Normal	30	14
Abnormal	13	32
Post-Exercise	(31 Studies)	(21 Studies)
Normal	25	9
Abnormal	6	12

post-exercise electrocardiograms, a false-positive rate of approximately 20%.

In the 46 patients with significant coronary stenoses the presence of 14 patients with normal resting electrocardiograms was not unexpected. On the other hand, post-exercise electrocardiograms following the standardized procedure of Master[4] are fre-

quently relied upon in practice to reveal latent myocardial ischemia. Of 21 patients from this group tested, nine had normal, post-exercise electrocardiograms for a false-negative rate of close to 50%. Some of these falsely negative results may be attributable to a deficiency in the usual technic of standardized exercise stress, with failure to obtain adequate acceleration of cardiac rate. In these nine patients in the falsely negative group, the average maximum pulse rate immediately post-exercise was only 112 per minute, and four of these never generated rates above 90 despite completing the prescribed exercise load in the required time. The 12 patients with true-positive tests had an average pulse rate of 129 per minute immediately after exercise, and only two had rates under 120. Nevertheless, of the nine patients with significant stenoses and negative Masters tests, four who were studied further on treadmill testing for maximal exercise tolerance were able to generate pulse rates in excess of 150 per minute. In one of these patients ischemic ST changes appeared at the faster rate, another stopped at that point because of angina without EKG changes, and in two patients no EKG changes appeared despite sustained pulse rates of 160 and 165 per minute.

Discussion

The use of anatomic information from arteriography as the basis for identifying the physiologic situation of myocardial ischemia, manifest by angina or electrocardiographic abnormalities, can be challenged. Nevertheless, by excluding patients with aortic valvular or hypertensive disease or myocarditis from this study, the possibility of the usual non-coronary forms of ischemic heart disease was minimized. Other studies of this problem have identified occasional patients with unexplained evidence of ischemia and normal arteriograms,[1,2] and the mechanism and frequency of occurrence of this disorder remain to be learned. Correlations of arteriographic findings with actual, anatomic stenosis at autopsy[6,7] have been good, with some tendency towards underestimation of the amount of pathologic narrowing. Coronary arteriography, whether performed by the ciné technique or using multiple, bi-plane, simultaneous films in rapid sequence, remains the best available, objective means of assessing the significance of the simpler clinical tools of history-taking and electrocardiography.

A much more extensive study of the association between arteriographic findings and the various "risk factors" has been made by Cramer, Paulin, and Werko.[8] They did find a minor influence of elevated total serum cholesterol on the frequency of coronary pathology, a greater influence of total serum glycerides, and an equal and independent influence of smoking. Presumably because of the effect of their selection of patients for arteriography, age did not influence the frequency of finding coronary pathology in that report.

Accepting an element of subjectivity in assessing symptoms, the high degree of usefulness of a classical history of anginal pain seems substantiated by the results in Table II, so long as this pain is not accompanied by other types of non-anginal chest pain, and physicians agree about the character of the pain. The reasons why so many of the 32 patients who seemed to have both atypical chest pain and angina had normal anatomy could not be inferred from this study. Perhaps this group will be the source of those patients with symptomatic and electrocardiographic evidence of ischemia and normal anatomy,[2] among whom instances of subsequent progression to transmural myocardial infarction appear to be quite rare. None of the 43 patients in this group with normal arteriograms are known to have developed myocardial infarction in a period of over a year since all of these arteriograms were performed; a more detailed follow-up of such patients is pending.

The uncertainties related to the value of the standard "double Master" stress have

been amply reviewed in the text by C. K. Friedberg.[9] Until recently, however, the evidence for or against the predictive value of such tests was accumulated without the objective basis which coronary arteriography provides. Using stricter criteria for a positive test, such as a minimum ST displacement of 1 mm., it appears possible to eliminate most of the falsely positive tests, which occurred in approximately 20% of the anatomically normal group studied here.[10,11] Sheffield and Reeves[12] suggested that the incidence of falsely negative results, which approached 50% in this and their studies, could be reduced by assuring more nearly maximal levels of exercise stress and faster pulse rates. Our observation of slower pulse rates immediately after completion of the exercise in the present group of falsely negative tests supports that suggestion. We now require that the exercise be repeated or extended until pulse rates of at least 130 per minute are achieved before considering the test as having been technically adequate. Nevertheless, as indicated by the small experience with treadmill studies, this can not be completely relied upon to predict the existence of anatomically significant stenoses.

Coronary arteriography is raising new questions as well as answering some of the old questions about the clinical recognition of ischemic heart disease. The problem of patients who present evidence of myocardial ischemia with normal arteriograms has been previously referred to. We have encountered one individual with atypical pain and an abnormal post-exercise EKG without angiographic evidence of atherosclerosis, in whom the entire right coronary artery arose from the main trunk of the left coronary on a congenital basis. Other impressive, congenital variations in coronary size have been encountered, and the syndrome of "benign left bundle branch block" has been seen several times in our experience. The ultimate clinical significance of such variations remains to be learned.

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Symptomatic Occult Hydrocephalus with "Normal Cerebrospinal Fluid Pressure"

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Progressive dementia was reversed in this case of occult hydrocephalus by a ventricular peritoneal shunt.

TO THE PRAGMATIC PHYSICIAN delineation of a previously unrecognized clinical syndrome assumes its greatest importance only when effective therapy for the syndrome also evolves. The technical refinements of shunts for the relief of hydrocephalus represented the therapeutic development which made mandatory recognition of the syndrome of symptomatic occult hydrocephalus with "normal cerebrospinal fluid pressure". This is a newly described disease the tragic consequences of which can be reversed when recognized and indeed cured by a ventricular shunt. It is our purpose to describe such a case and to review the pertinent aspects as presently understood. Although we will add no new information, the entity is novel enough to warrant re-emphasis by such a review.

In the July 15, 1965, New England Journal of Medicine, Drs. R. D. Adams, C. M. Fisher, et al.,[1] first described this entity. The semantics of this entity must be reviewed for its appreciation. "Hydrocephalus" refers to distention of the cerebral ventricles, usually as the result of obstruction somewhere along the pathway of the cerebrospinal fluid circulation. The hydrocephalus in this condition is "communicating" because the blockage of the cerebrospinal circulation is not secondary to obstruction within the ventricular system. Although at its beginning, the cerebrospinal fluid pressure is elevated, when symptoms develop the cerebrospinal fluid pressure is below 200mm.

The "normal pressure" is still associated with destruction of brain white and gray matter. To understand the dynamics of the phenomenon, one must understand that according to Pascal's law for enclosed fluid, the force on the walls of the container is equal to the product of the pressure of the fluid and the area of the wall: F=P X A. Thus as the ventricular system's surface area increases the "hydraulic press effect" of lesser pressures become operative. The concept of cerebrospinal fluid "force" must be recognized in cerebrospinal fluid hydrodynamics. In a fluid-filled system of unusual shape the greatest pressure is exerted at the widest portions. Also white matter yields to pressure more than gray matter. Hence, one observes that frontal paucity of thought, incontinence of bladder, frontal ataxia appear first. Next appear paraparesis and Babinski signs from stretching of the long fibers of the leg area descending around the dilated ventricle. Then, sucking and grasping reflexes appear. Later still, stretching of the third and fourth paraventricular structures induce drowsiness and nystagmus.

The etiology of this condition is still an enigma. In two of the three cases described in 1965 no etiology was apparent. Our case also is agnogenic. Whether this condition complicates other causes of white and gray matter destruction is also unknown. The answer is of practical importance because

shunting such patients might slow or reverse a progressive dementia. In investigating this possibility, Dr. James H. Salmon[2] in 1968 shunted fifty patients with hydrocephalus associated with loss of cerebral tissue. Seventeen of twenty-eight patients studied showed improvement. Most of the improvement occurred in patients with a cerebral mantle-width of frontal lobe tissue between lateral ventricle and edge of frontal cortex-measured on lateral film pneumoencephalogram—measuring 40mm or less. He postulated improvement from enhanced blood flow with decrease in intraventricular pressure. Whether diverse degenerative diseases such as Alzheimer's disease, cerebral arteriosclerosis, senile cortical degeneration will be helped by this procedure awaits more investigation. Certainly the absence of intrinsic cerebral disease in a patient with progressive dementia should alert the physician to the possibility of this entity. Earlier forgotten meningitis or subarachnoid bleeding of diverse etiologies might be succeeded by the collagen proliferation responsible for the communicating hydrocephalus.

The pneumoencephalogram is essential in diagnosis. It demonstrates hugely dilated cerebral ventricles with no air in the cerebral sub-arachnoid spaces.

The shunt for treatment of the hydrocephalus is an ingenious technical development. The tubing extends in a subcutaneous tunnel between the lateral cerebral ventricle and the right atrium of the heart or the peritoneal cavity or the jugular vein. The Holster slit valve regulates the flow of large amounts of fluid even when there is a high particulate or protein concentration. Excessive cerebrospinal fluid drainage is also effectively modulated. Infection and mechanical failures are infrequent. It is worth emphasizing that shunting patients with this entity will be followed by improvement in an unknown percentage of patients. Not enough differential criteria are yet available to know before surgery who will benefit.

Case Report

G.C., a 38 year old white male civil engineer was hospitalized at the Norfolk General Hospital on January 31, 1969, for alcohol withdrawal. A graduate of Mississippi State College, married and the father of five children, he was employed by a large local construction firm with international contracts. His alcoholism began three years prior to his hospitalization. He drank a pint of Bourbon daily, withdrew from his family, began finding it difficult to perform his work, felt constant anxiety. January 7-18, 1969, he was hospitalized on the inpatient unit of the Bureau of Alcohol Studies and Rehabilitation at the Medical College of Virginia Hospital. Physical examination here was unremarkable. SGOT determination was normal. Psychiatric evaluation suggested "an obsessive-compulsive personality with deeply ingrained maladaptive patterns, perfectionistic, rigid, punitive." Psychological tests disclosed "a superior intellectual composition; the tests suggested distortion, inadequate contact with reality in the face of emotionally arousing situations, depression with hostility." There were no findings of an organic brain syndrome. On his hospital discharge he returned to the use of alcohol and drank until his present hospital admission. On examination, he was tremulous, restless, intoxicated. A blood alcohol determination disclosed a level of 90 mg%. SGOT was normal; CPK was 39.7 units (normal: 0-12 units). He withdrew satisfactorily with parenteral chlordiazepoxide and oral chlorapromazine and phenobarbital. After withdrawal, he remained quite anxious and chlorpromazine was continued. On February 14, 1969, he had an elective nasal septoplexy because of septal obstruction. He developed severe epistaxis on his second post-operative day and hemoglobin dropped to 6.7 grams%. He was given whole blood. There was no hypotension. On February 20, 1969, he was noted to be confused, disoriented, could not calculate, had no knowledge of current events. A lumbar pic-

ture disclosed a normal spinal fluid pressure, no cells, and a normal glucose and protein. Skull x-rays and brain scan with radioactive mercury were negative. Blood bromide level was normal. An electroencephalogram showed diffuse central nervous system dysfunction compatible with increased intracranial pressure. Neurological examination was normal. A pneumoencephalogram showed symmetrical dilatation of the lateral ventricles with no air in the subarachnoid space covering the ventricles. The afternoon of the pneumoencephalogram he sat up, ate supper, and complained of no headache or any other untoward symptoms. He was observed for three weeks with no clearing of his brain syndrome. On March 21, 1969, he had a ventricular-peritoneal shunt. The shunt was inserted into the lateral ventricle by a catheter shunt passed into the peritoneal space. He tolerated the procedure well. The day following surgery he had several grand mal seizures and developed hyperpyrexia. Diphenylhydantoin sodium and phenobarbital were started and no further seizures occurred. His sensorium began to clear over the next week. He could calculate, exhibited a knowledge of current events, became interested in his surroundings, asked questions about his illness. On April 5, 1969, he was discharged on diphenylhydantoin sodium and phenobarbital. When last seen in November, 1969, he was back at work and able to perform all his duties. He had remained abstinent from alcohol. He was on diazepam 10 mg qid for anxiety symptoms. There were no residuals of his brain syndrome.

Discussion

The etiology of his hydrocephalus is unknown. The accompanying brain syndrome became symptomatic in the setting of alcoholism, alcohol withdrawal, post-operative state following nasal septoplexy complicated by anemia-inducing epistaxis requiring whole blood replacement. Psychiatric-psychological evaluation had previously suggested no organic brain dysfunction. Other causes of dementia—degenerative disease, vascular disease, tumor, exogenous intoxication, metobolic encephalopathy—were excluded. The shunting dramatically reversed his dementia.

Conclusions

A patient who exhibited symptomatic occult hydrocephalus with normal cerebrospinal fluid pressure is described. A ventricular-peritoneal shunt reversed his accompanying dementia. This newly described neurological disease and its cure by a shunt procedure is discussed. This brain-destroying disease is correctable if diagnosed by pneumoencephalography. Its recognition, therefore, assumes paramount importance. This is one of the few treatable causes of progressive dementia.

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Early Diagnosis and Management of Multiple Gestations

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For many reasons it is urgent that multiple gestation be diagnosed early. This can be done, as shown here, by a simple screening measurement of the uterine fundus.

THE PROBABLE BENEFITS to perinatal and maternal health are sufficient motivation to make the early diagnosis of multiple gestation important. In addition, one would like to avoid the distress of a delivery room denouement. The purpose of this paper is to show that, in most cases, twins may be readily detected by a uniform simple screening method prior to birth. We will also examine the possible beneficial results of treatment of the patient with a twin gestation.

Materials and Methods

The experience of two Air Force hospitals was examined. The types of patients and facilities were very similar, whereas the physician staff and treatment given twin gestations were different.

A. *Wilford Hall USAF Hospital (WHH):*

From January 1961 to July 1966, 111 women delivered twins. The care was given by interns and residents supervised by a teaching staff of four to five trained obstetricians and gynecologists. At each antepartum visit the uterine fundus was measured with a tape measure. This was done in a fashion described by Spiegelberg[1] and was recorded in centimeters above the symphysis pubis. Between 20 and 30 weeks gestation the uterus was considered to be larger than normal if the measurement was 2 cm more than the current week of gestation. Also, a measurement greater than 35 cm between the 32nd and 36th week of gestation was believed abnormal. If the discrepancy between size and dates persisted for two weeks, an x-ray of the abdomen was taken. Patients with twins were placed at bed rest from 28 to 36 weeks, usually in the hospital.

B. *Malcolm Grow USAF Hospital (MGH):*

From January 1960 to July 1966, 87 women gave birth to twins. The antepartum care was given by several trained obstetricians and gynecologists with various educational backgrounds. No consistent method of examination was used. Bed rest at home with frequent visits to the clinic was the usual management, when twins were known to be present. Hospitalization was employed for specific complications other than the presence of twins.

The 198 twin pregnancies were studied and compared. Of special interest were the details surrounding the diagnosis and the ultimate value of the diagnosis.

The opinions expressed in this paper are those of the authors and not necessarily those of the Department of Defense or of the United States Air Force.

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Results

Table 1 shows that the WHH technique led to diagnosis in 40 per cent of the cases by the 28th week with an additional 24 per cent in the next four weeks. The MGH figures are considerably less. At the onset of labor 91 per cent of the WHH patients, and their doctors, knew they were going to have twins. The MGH figure was 61 per cent. In the WHH series approximately five patients received an x-ray in order to detect one set of twins. Twins were suspected because of inappropriate measurements in most of the WHH patients. In addition, a rapid rate of growth was a common finding; this, too was detected by the more precise measurement. In the MGH group an impression of a large fundus or an x-ray taken to determine presentation were the most common leads to diagnosis. Multiple fetal hearts and/or fetal parts led to detection in a few cases in each series. (Table 2)

TABLE 1

GESTATION WEEK OF DIAGNOSIS

	WHH		MGH	
	Number of Patients	Percent of Total 111 Patients	Number of Patients	Percent of Total 87 Patients
17-24 weeks	17	15.3%	1	1.2%
25-28 weeks	28	23.3	11	12.8
29-32 weeks	27	24.3	10	11.7
33-36 weeks	22	19.8	19	22.1
37-40 weeks	7	6.3	12	13.9
In Labor	2	1.8	6	7.0
At Delivery	8	7.2	28	32.3
Total	111	100%	87	100%

TABLE 2

BASIS FOR SUSPECTING TWINS*

	WHH		MGH	
	Number Patients Each Category	Percent of 111 Patients	Number Patients Each Category	Percent of 87 Patients
1. Fundal height greater than cm per week of gestation from 20 to 30 weeks gestations	63	57	3	3.3
2. Fundal height over 35 cm at 32 to 36 weeks	28	25	0	...
3. 2 Fetuses palpable	4	3.6	7	7.7
4. 2 FHT's	11	9.9	10	11.3
5. Rapid Increase in Fundal Height	9	8.1	1	1.1
6. "Felt Like Twins"	1	0.9	3	3.3
7. Incidental Antepartum Xray (checking position)	2	1.8	15	16.5
8. Unsuspected at Delivery	8	7.2	28	30.7
9. "Large Fundus for Dates"	0	...	20	22.0
10. Unknown	0	...	5	5.5

*The total number of reasons for suspicion and percentage in both groups is greater than the total number of patients because of the combination of reasons in some patients.

Table 3 shows the maternal complications. Some of the differences may be ex-

plained by diagnostic criteria. One mother in the WHH group was critically ill with hepatitis and pancreatitis associated with tetracycline.[2] The one maternal death was due to amniotic fluid embolus.

Table 4-A shows the birth weight and fetal losses for each group. Table 4-B further analyzes the 33 neonatal deaths. Only 18% of these deaths occurred in the group of patients diagnosed and treated with bed rest.

The overall death rates were:

1. 15% for WHH
2. 8% for MGH

One stillborn was a fetus papyraceous and three stillborns were secondary to intrauterine twin transfusion syndrome. Of interest is the fact that in the 198 pregnancies,

TABLE 3

MATERNAL COMPLICATIONS

ANTEPARTUM	WHH		MGH	
	Number of Patients	Percent of Total 111 Patients	Number of Patients	Percent of Total 87 Patients
Anemia	16	14	13	15
Preeclampsia	5	4	10	12
Hydramnios	12	11	5	6
Prolapsed Cord	4	4	3	3
Inertia	6	5	5	6
Urinary Tract Infection	10	9	0	
POSTPARTUM				
Uterine Atony	22	20	15	17
Infection	6	5	2	2
Amniotic Fluid Embolus	1	7	0	

TABLE 4

A. BIRTH WEIGHTS AND FETAL LOSSES

	WHH 222 BABIES			MGH 174 BABIES		
	Stillborn	Liveborn	N.N. Deaths	Stillborn	Liveborn	N.N. Deaths
Under 1000 Gm.	5	9	7	2	5	4
1000–1499	2	6	6	0	10	6
1500–1999	2	26	6	0	17	0
2000–2499	2	57	3	0	50	0
Over 2500	0	113	0	0	90	1

B. ANALYSIS OF NEONATAL DEATHS

	WHH 22 INFANTS		MGH 11 INFANTS	
	DX and RX	UNDX—NO RX	DX and RX	UNDX—NO RX
Under 1000 Gm.		7		4
1000–1499	2	4	2	4
1500–1999	2	4		
2000–2499		3		
Over 2500				1

there were eight sets of monoamniotic twins. One viable set was diagnosed antepartum.[3] Six of these 16 monoamniotic twin infants were stillborn due to cord entanglement.

Table 5 illustrates the significantly greater average birth weight in those twins whose

TABLE 5

Comparison of Average Weights of the Delivered Twins (Grams)

	WHH	MGH	Combined
#Twin A Dx and Rx*	2,580	2,863	2,665
#Twin A Undiagnosed	2,041	2,311	2,155
#Twin B Dx and Rx*	2,551	2,665	2,608
#Twin B Undiagnosed	1,984	2,211	2,155

#Only twins gestation >26 weeks duration.
*Rx—At least 2 weeks bed rest.

mothers received at least two weeks bed rest. The overall prematurity rate of the total number of infants delivered as defined whenever one twin weighed less than 2500 gm, or by week of gestation delivered, is illustrated by Table 6. There was no significant difference between the two hospital groups.

TABLE 6

Incidence of Prematurity

	WHH	MGH
<36 weeks	28%	26%
<38 weeks	45%	45%
<2500 Gms*	48%	49%

*Prematurity rate as defined whenever *one* twin weighed less than 2,500 grams.

Eighty-nine patients of the WHH groups (who were diagnosed as having twins prior to labor), were hospitalized for two or more weeks. Those not hospitalized were unable or unwilling to go for various reasons. Sixteen patients in the MGH group were hospitalized and these chiefly for specific complications.

Discussion

Measuring the uterus with a tape is a very simple technique easily taught to rotating interns and new residents. The range between several examiners rarely exceeds 2 cm. In our experience careful measurement of the uterine fundus is an acceptable method for selection of patients for x-ray analysis (KUB). A 20% rate for confirmation of twin gestation selected by this method of measurement raises the question of needless x-ray exposure. We believe that the new methods such as ultrasound, and thermograph, will make the diagnosis even easier and less hazardous. Where these methods are not readily available the uterine measurement presents a useful screening technique. We also believe that the diagnosis of twins is of sufficient value to warrant the one x-ray necessary to make the diagnosis. We suggest that this picture be taken after the 22nd week of gestation in order to avoid missing a small fetus. In a recent report by Farrell,[4] 94.7% of the patients with twins who attended the antenatal clinic, were diagnosed prior to the onset of labor. However, in that group radiographs were taken without hesitation because of the very high incidence of twinning in the study population (1:28). In our series of twins the incidence of twinning was 1 per 89 deliveries. The value of the measuring technique is illustrated by the fact that 91% of the twin patients (WHH) were diagnosed prior to labor. This high percentage shows that the diagnostic screening technique is effective and with its utilization, twins can be diagnosed early in the pregnancy.

One comment seems necessary regarding the maternal complications of these groups (Table 3). Even though 91% of the patients in the WHH group were known to have twins prior to labor, and preparations were made accordingly, uterine atony with hemorrhage, was slightly greater than the MGH group. This may, perhaps, be related to the level of training of the different staffs. This is a higher incidence than previous report.[4,5] However, this illustrates that uterine atony occurs frequently with twin deliveries and is often difficult to prevent. Table 3 clearly illustrates that the early diagnosis of twin

gestation does not prevent maternal complications. The early diagnosis (WHH) was associated with reduced incidence of preeclampsia, but the incidence of hydramnios was greater.

It is of particular note that the premature rates for both groups, as determined by either period of gestation or by infant weights was essentially the same and similar to previous reports. This clearly illustrates that the early diagnosis of twins does not reduce prematurity and that this challenge still exists. However, the ability to diagnose twins early in the gestation allows the physician to try other methods to reduce prematurity.

The increased weights of the twins diagnosed and treated (with bed rest at home or hospital) as compared with those undiagnosed and untreated is significant. In addition eighty-two per cent of the neonatal deaths occurred in infants from the undiagnosed group as compared to only 18% in the diagnosed and treated group. One of the infants in the diagnosed group died of congenital anomalies incompatible with life. The majority of the other neonatal deaths occurred secondary to immaturity and/or hyaline membrane disease including the one infant weighing 6 lbs. In a recent review of neonatal deaths secondary to hyaline membrane disease, one of the most common obstetrical factors was twin gestation.[6] All the infants developing hyaline membrane disease, in that group of twins reported, weighed less than 2500 grams. Our analysis confirms this observation that neonatal deaths in twin gestation are predominantly the result of hyaline membrane disease. Our data indicates that diagnosis and treatment is associated with larger infants and a better survival. This is not necessarily a cause and effect relationship, but the decreased death rate is probably secondary to the increased fetal weight. (Table 4) Thus, it may be implied, but not conclusively stated, that the diagnosis with subsequent bed rest treatment led to the delivery of larger prematures with an increased chance of survival. The approximate 500 gram weight gain for each treated twin in both groups appears significant. The larger babies may have caused the diagnosis to be made and subsequent treatment instituted, but this is not as likely when the diagnosis is made early in the gestation. There is other supporting evidence that would indicate rest is helpful in reducing some of the hazards of prematurity,[4] and we intend to continue this plan whenever possible.

We also believe there are other values in knowing that any given pregnancy is multiple. Proper preparation for delivery, and good immediate newborn care depend on accurate information. This is especially true in teaching institutions when more experienced people need to be made available for complicated deliveries. In addition, one important aspect, resulting from early diagnosis of twins, is that not only is the physician alerted to observe for the increased hazards of the twin gestation but the patient and her family, are given time to adjust to this unexpected situation. Thus she can make necessary home arrangements in advance. The patient is often satisfied to learn that she will have twins.

Summary

An analysis has been made of 198 twin gestations particularly comparing those diognosed and treated with bed rest during the gestation with those not diagnosed. The actual incidence of prematurity and maternal complications were not reduced. However, the diagnosed and treated twins outweighed the undiagnosed group by approximately 500 grams per twin. Also 82% of the neonatal deaths occurred in the untreated group. In one of the hospital groups analyzed, early diagnosis was accomplished in 91% of twin gestations prior to labor by the use of a simple screening measurement of the uterine fundus which was used by the entire physician staff. The potential

value of early diagnosis and bed rest therapy is discussed.

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Physician Reporting of Physically Impaired Drivers

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The physician must cooperate with the Division of Motor Vehicles in keeping unsafe drivers off the streets and highways. The extent of his responsibility for reporting his physically impaired patients is discussed.

IF PROGRESS is ever to be made against the constantly increasing toll of highway injuries and fatalities, it must come by scrutiny of each input to the driver-auto-highway equation. The factor which the medical profession can help control is the driver. It is clear that driver impairment contributes to highway accidents. The most tragic impairment is that voluntarily undertaken through alcohol.[1,2] It is also apparent that some driver impairment stems from involuntary conditions and illnesses which render the driver physically unable to conduct his driving or which render him liable to unpredictable lapses of self-control. This would include such lesions as coronary or carotid insufficiency, heart block, uncompensated neurological defects, uncontrolled epilepsy, and visual field defects. Such persons are a latent menace on the highway.[3,4,5,6,7,8] Unfortunately, many such drivers are discovered only through their having an accident. It is better prophylaxis to have them made known to motor vehicle authorities before they have an accident. The physically impaired driver must be restricted in his use of an automobile, or denied use entirely if sufficiently incompetent. The physician who becomes aware of such a menace must assume his responsibility for seeing that the driver's incapacity is at least brought to the attention of the motor vehicle authorities.[9,10] For the physician this involves a conflict between his duty of confidentiality to the patient and his duty as a citizen and physician for the safety and welfare of the public.

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Duty of Confidentiality

The duty of confidentiality, which the physician often relies upon to countenance his silence or inaction in such a disclosure type of situation, is not unconditional and never has been absolute. Ethically, the physician has for centuries been bound not to reveal the patient's confidences. The Principles of Medical Ethics today prohibit his revealing such information "unless he is required to do so by law, or unless it becomes necessary in order to protect the welfare of the individual or of the community".[11,12] The privilege has no applicability to a criminal situation nor to those in which the safety, health, and welfare of the community are involved. Bullet and stab wounds in persons suspected in good faith of having been involved in foul play or disturbance of the peace may be safely reported to authorities, although not required by statute. The physician so reporting is protected, on the theory that the civic good resulting is superior to any interests of confidentiality on the part of the patient.[13] There are also

mandatory reporting duties affirmatively placed on the physician to report communicable disease,[14] venereal disease,[15] child abuse,[16] and his treatment of other physicians for alcoholism, drug addiction, or mental, emotional or personality disorders.[17] These reporting requirements, whether discretionary or mandatory, do not, of course, excuse the physician who indiscreetly or maliciously reveals information which is not of public concern; such a physician would, as always, stand liable for his breach of confidence. It can be seen, however, that the interest of society in its safety, health, and administration of justice transcends the privilege of the physician to stand mute when he, within his professional capacity, discovers an item of paramount civic importance. The physician must assume his responsibility in such cases, for he is often the first or only person who can intercept such a public menace early.

Authority to Revoke Driver's License

The Division of Motor Vehicles (DMV) presently has the power to control the physically impaired driver. DMV is given statutory authority to require a driver to submit to an examination to determine his fitness to operate a motor vehicle, and it may include a physical examination.[18] The Division may suspend or revoke the driver's license, or can issue a restricted license,[19] depending on the results of the examination. Commencing in 1970, all applicants for a renewal license will be required to take tests of vision at certain renewal intervals (ages 30, 38, 42, and each four years thereafter). In addition, the Division may require any applicant to take the visual test at other renewal times.[20] To date, however, there is no provision for a more detailed physical examination routinely.

The operation of a motor vehicle is characterized in Virginia as a "conditional privilege", which the State can, under the police power and by due process of law, control.[21] Revocation can be done only after proper notice to the affected driver, and a hearing. The burden of proof is on the Commonwealth.[22] Reported cases which have involved attempts by DMV in its discretionary power[23] (as opposed to statutory mandatory revocation[24]) to revoke a driver's license have been those turning on revocation for offenses such as reckless driving and serious violations. No reported cases seem to turn on the statutory section which allows discretionary revocation for "mental or physical infirmities or disabilities rendering it unsafe for him to drive a motor vehicle upon the highways".[25] The Virginia Supreme Court of Appeals has upheld the constitutionality of revocation procedures.[26] These statutes are construed in a liberal manner consonant with their purpose of "removing from the streets and highways a driver who is likely to cause injury and damage before tragedy occurs".[27] It is reasonable to believe that such an interpretation would be carried over to revocation proceedings based upon the physical infirmities or disabilities of the driver.

Detecting the Unfit Driver

A control system is only as good as its weakest link. One of the weak points in the system is that of detection of the physically unfit driver. Since 1968, any State agency which has knowledge that a person is blind (or nearly so) is required to report him to DMV.[28] No other routine reporting requirements seem to exist. DMV is permitted to initiate revocation proceedings when it is in receipt of records showing

(1) that the driver has been convicted of two moving violations within one year, or

(2) that the driver has been involved in two accidents within one year involving personal injury or property damage above $100, or

(3) that DMV has any other good cause to believe that the operator is incom-

petent or otherwise not qualified to be licensed.[29]

It is obvious that categories #1 and #2 are operative only *post hoc*. If the unfit driver is to be recognized before he causes an accident, DMV must be notified by someone who is familiar with the driver in question, and who has good reason to believe that he is at least in need of an examination to test his competence and physical abilities. The physician is one such person.

When the physician believes in good faith and professional judgment that a driver is so physically impaired that he is likely to be a poor driver and a danger to himself and others on the highway, the physician should undertake to see that DMV is apprised of that fact. Perhaps the physician would initially prefer to work through the patient himself, to get him voluntarily to report himself to DMV. Perhaps the physician would try to get the driver's family to do it. In the end, however, the physician himself may need to take the initiative and communicate directly with DMV. A report to DMV is not an automatic revocation or restriction on the driver. It is only notice to DMV of the existence of probable cause for re-evaluation of a possibly incompetent, perhaps dangerous, driver. The initiative thereafter must be assumed by DMV.

Medical Advisory Board

A Medical Advisory Board was established by statute in 1968 to serve as an expert advisor to DMV in medical cases and also to help formulate prospective medical standards for driver licensing.[30] It is composed of seven physicians appointed by the Governor. A report to DMV of a physically impaired driver is referred for medical evaluation to the Medical Board, which then makes its recommendation to DMV as to whether the person's license should be granted, revoked or suspended. The Board's opinion carries great weight with DMV and in any formal hearings which may ensue. It appears, however, that a formal hearing is still required when DMV attempts to follow through on the Board's recommendation of suspension or revocation. The formidable procedural steps involved in such hearings make DMV rather reluctant at present to get involved in medical cases. Its Hearing Examiners and budget are already overloaded with hearings for traffic violators.[31] It would greatly facilitate matters to give DMV the statutory authority to permit it to act summarily on the Medical Board's recommendation, thus avoiding protracted and litigious hearings on medical issues, saving, of course, a right of appeal by an aggrieved party. These procedural improvements are worthy of consideration by the General Assembly.

Protection of Physician

It is believed that a physician who in good faith reports a physically impaired driver would be protected from a charge of breach of confidence. A good-faith report to DMV today would seem to be as important to the public safety and welfare as the reporting of venereal disease. It falls within the class of disclosures which are legally protected as being for the furtherance of the health and safety of society. DMV indicates that within its experience there has been no court case involving any action taken on the part of DMV as a result of such disclosure on the part of a physician.[32,33]

It is to be hoped that the present system of voluntary reporting will continue to be effective. It is not impossible that a mandatory reporting system may be proposed. Any mandatory system has inherent drawbacks, not the least of which is that the statute then sets the requisite standard of care, any deviation from which is a delinquency. The mandatory reporting requirement for communicable disease, for instance, carries a minor sanction for failure to report.[34] The penalty is insignificant, compared to the possibility that the physician may be held civilly liable for the consequences of his failure to follow the mandatory reporting

statute. California, for instance, requires reporting of disorders characterized by lapses of consciousness.[35] The untoward result of failure to report in one instance in California was that the non-reporting physicians were sued in damages for an unreported epileptic's having an automobile accident; the physicians settled out of court for $95,000.[36] It is hoped that such an experience will not occur in Virginia.

A discretionary system is only as efficient as its utilization by the cooperating members. Any voluntary system is more palatable than a compulsory one. It is hoped that physicians in Virginia will utilize the opportunities available to assist in recognizing and, where necessary, removing from the highways, the physically unfit motor vehicle operator.

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From Croton Oil to Isotopes

One Hundred Years of Medicine at Hampton Veterans Administration Center

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This institution has had a distinguished career from girls' school to the well equipped and highly efficient Veteran's Administration Center of today.

THE HISTORY of the Hampton Veterans Administration Center is fascinating to contemplate. From girls' school to Civil War hospital to Soldiers Home to Veterans Administration Center. Such is the story here on the shore of Hampton Roads. Soon will be achieved a century of service to veterans of all United States wars. One is tempted to exclaim in Biblical language: First there was God and then there was General Butler! Benjamin Franklin Butler had the distinction of being the most controversial general in the Union Army. He was denounced by some as a knave. He was ridiculed by others as a fool. He was praised by others still as a genius. Whatever the case may be, it can truly be said that when this gentleman was around there was never a dull moment.

The military career of General Butler seems to have been a series of alternating triumphs and disasters. In May 1861, he seized Newport News and closed the mouth of the James River to the Confederates. In addition, he disrupted the economy of plantations for miles around by giving shelter at Fort Monroe to runaway slaves. But in June, he was being violently blamed for the ignominious rout of the Union forces at Big Bethel. Two months later, he was hailed as a military genius for the capture of Hatteras Inlet. In New Orleans, in 1862, where the hostile populace had been gleefully emptying slop pails on the heads of the Union Navy, Butler came along and imposed order without firing a shot. But at the height of



Veterans at Hampton Soldiers Home in 1885—
Fort Monroe Casemate Museum.

Address delivered at Veterans Administration Center, Hampton, November 5, 1969.

his triumph, he was suddenly removed from command for reasons undisclosed even to Butler himself. In 1864, both Northerners and Southerners derided Butler's Dutch Gap Canal in the James River. Yet after the war it served as an important ship channel and it is still in use today. His "powder ship" which he expected would demolish Fort Fisher, merely disturbed the slumbers of the Confederate defenders. Yet it was this same dreamer, who in the closing months of the war, purchased the Gatling gun, which had been repeatedly turned down by the Ordnance Department of the United States Army. After the Civil War this rapid-fire gun was adopted not only by the United States but by all the major powers of the world. And today, according to *Newsweek,* the Gatling gun is being used on American supersonic jet fighter-bombers. Such a man was your founder, for he was indeed your founder. And thereby hangs a tale.

In the years just preceding the Civil War an imposing Graeco-Roman structure arose on this shore. It was a five-story brick building with a facade of eight tall columns and a roof crowned with a lofty dome. It stood on the site today occupied by Building No. 114 (Personnel Quarters). This was the Chesapeake Female College. We can well believe that the college was a somewhat daring enterprise. The ladies of one hundred years ago were expected to be ornamental and to bear children, but neither of these accomplishments necessarily required a college education. Consequently, the College was plagued with financial difficulties from the very start. At the outbreak of the war, the fair students fled. The Confederates began to use the dome of the deserted college to observe what was going on at Fort Monroe. Whereupon Union soldiers seized the building and before long it was converted into the Chesapeake Military Hospital with a capacity of about 1,200 beds. Eventually a hospital for enlisted men, known as Hampton Military Hospital, was built on what is now the site of Hampton Institute. From then on Chesapeake Military Hospital was used for officers only. With the addition of 400 hospital-tents and 60 wall-tents, these two hospitals had a combined capacity of nearly 4,000 beds.

Standing on opposite sides of Jones Creek, they were connected with Fort Monroe by a horse railroad, which ran along County Street through what is now Phoebus and across Mill Creek into Fort Monroe. What is today the Hampton section of the National Cemetery was originally the common graveyard of the Chesapeake and Hampton Hospitals. Confederate prisoners were also treated in these two Union hospitals, and this is why you will find in the south end of the National Cemetery about 250 Confederate graves. After the war, Hampton Military Hospital, being of temporary construction, was pulled down except for several buildings which were used for the beginnings of what is today Hampton Institute. However, Chesapeake Military Hospital, being a permanent building, was to have a far different fate. And here is where General Butler enters the picture.

After his recall from New Orleans, Butler returned to his home in Massachusetts. But he longed to get back into the center of things. He demanded reassignment and since the General was politically powerful he could not be ignored. So he was again given command of Fort Monroe where he arrived in November 1863. During the next year, 1864, Butler laid the foundation for his eventual acquisition of the Chesapeake Female College building. This acquisition was rather complex, but its legality appears to have been unassailable. It even withstood a Congressional investigation in 1871. In civilian life General Butler was one of the nation's foremost lawyers, a past master of legal legerdemain. The mere mention of his name often caused seasoned lawyers to shrink from combat and give their clients just four little words of advice: settle out of court!

The first act of Congress incorporating

the National Home for Disabled Volunteer Soldiers was passed in 1865. It provided for a board of 100 managers, a majority of whom had to be present for a quorum. Despite several attempts, it was impossible to assemble a quorum of these multitudinous managers. An amendatory act was approved in 1866 which provided that the Board of Managers should be composed of the President of the United States, the Secretary of War and the Chief Justice of the United States, ex-officio, together with nine other citizens of the United States, who were to be residents of the states which had furnished troops to the Union Army during the Civil War. General Butler became President of the Board of Managers and Treasurer as well, a dual capacity which naturally gave him considerable influence. Before long three branches were opened: Central Branch, Dayton, Ohio; Northwestern Branch, Milwaukee, Wisconsin; and Eastern Branch, Togus, Maine. It goes without saying that these Homes were for Union veterans only, the Confederate veterans, or rebels, as they were bluntly called, being outside the provisions of the legislation.

In 1870 it was suggested that a Southern Branch should be opened near Hampton. To establish a Home for Union veterans in the South may seem a little unusual. However, it appears that General Butler thought that the warm, sunny climate of Virginia would be beneficial to those afflicted with tuberculosis, or consumption, as it was then called. He also felt that such a Home would be more accessible to the many Negro veterans of the Union Army, most of whom lived in the South. In July 1870 the Board of Managers approved the establishment of the Southern Branch and in October the same year the Chesapeake Female College building was bought from General Butler for a price of $50,000. In December 1870 Southern Branch was opened for the reception of disabled veterans. Although the college building had served as a hospital during the Civil War, it was never used as a hospital during its Soldiers Home days. It became a dormitory known as the Main Building, holding over 500 members. Smaller buildings served as hospital until the construction of a large building which served as hospital from 1885 to 1938. This was Building No. 39, which some in this audience will remember as the Administration Building. It was demolished in the early 1960's to make way for Building No. 137, the present Intermediate Service. The old college building, under its name of Main Building, served as a dormitory for many years, being torn down about 1913.

But let us return to the year of 1870, when Soldiers Home opened its doors. What sort of world was it in those days? Europe had again been the scene of a major war, this time between France and Germany. The French armies had been overwhelmed and their Emperor taken prisoner. But the city of Paris was still holding out. With all their supplies cut off by the besieging Germans, the plucky inhabitants had already consumed the elephants, lions and tigers of the Paris zoo, and were now down to the less appetizing fare of dogs, cats and rats. In England, which had held aloof from the war, Queen Victoria sat solidly on the throne of the British Empire, the greatest empire of all time. In the American White House sat Ulysses S. Grant, the general who had led the Union armies to victory in the recent Civil War. The transcontinental railroad had been completed in 1869 and one could travel all the way to California by rail, although service was sometimes disrupted by hostile Indians and great herds of buffaloes. Apart from the railroads, the motive power of all vehicles was the horse, which even pulled the street cars.

The telegraph provided instant communication all over this country and even with Europe. A successful transatlantic cable had been laid in 1866. However, the telephone was still locked in the brain of Alexander Graham Bell, who would not invent it for another five years. The typewriter was in

a crude experimental stage and to get a job as clerk one had to write a good hand. It was the age of gaslight and coal oil lamps. The American theater was entering upon its golden age. Greatest tragedian of the day was Edwin Booth, brother of the man who shot Lincoln. The first musical comedies were being produced with chorus girls clad in skimpy skirts and tights. Many good people felt that these shows were damning to the soul. The chorus girls were denounced as shameless hussies. P. T. Barnum, whose museum of freaks and curiosities in New York City had burned down, was preparing to go on the road with what would become the Barnum and Bailey circus. Barnum is the man, you will recall, who coined the popular saying: "There is a sucker born every minute."

Despite the great scientific and technical advances of the century, medicine and surgery lagged behind. Surgical operations were performed only on the external surfaces of the body because of the high mortality from infection and shock. Mainstays of medical treatment were blistering, cupping, poulticing, purging, and still more purging. Highly valued remedies were mercury for syphilis, cod liver oil for tuberculosis and belladonna for whooping cough. A few of the other drugs in use were veratrum viride, rhubarb, squill and croton oil. Incidentally, croton oil was a physic so powerful that it made castor oil seem effeminate! The usual dose was one to three *drops*. Medical treatment was on the energetic side. A single case of lobar pneumonia might be treated with quinine for the fever; chloral hydrate, morphine, belladonna for the cough; senega, squill, oil of turpentine as expectorants; creosote as a pulmonary antiseptic; poultices and compresses to the chest, and calomel to clean out the bowels. Diagnosis was by the five senses and the only laboratory test was the examination of the urine for sugar and albumin. Such then was the state of medicine and surgery when the Hampton Soldiers Home opened its doors.

The case histories of the Soldiers Home hospital were the soul of brevity. They were entered into a large book with ruled pages. The entry consisted of the name of the patient, the military unit in which he had served during the Civil War (such as Company "B", 16th Regiment of Massachusetts Volunteers), the date of admission to the hospital, age, place of birth, whether single, married, or widower, and address of nearest relative. Then followed a space of four lines headed "Disease and Treatment". At the end were two more lines for "Remarks", such as "Returned to Quarters" or "Died". For example, the doctor of Thomas Hazel, age 32, admitted April 4, 1873, recorded, "Ulceration of bowels. Disease following chronic diarrhea and dysentery contracted in 1863. Died April 16, 1873, at 1:00 a.m." This history occupied a line and a half. But here and there we see entries of the more meticulous doctor who has written a history of eight lines or even more, affording us a glimpse of the therapy of the time. Such is the case of Nicholas Miles, born in Germany, admitted in 1871, of whom his doctor wrote, "Tuberculosis of both lungs. Treatment included Morphine and Hydrocyanic acid mixture, one teaspoon TID. Mixture of equal parts of Cod Liver Oil and Whiskey. Pint of ale per day. Blister in subclavicular regions. Flaxseed poultice. Syrup of Squill. Chloral Hydrate at night PRN. For severe cough mixture of Syr. Squill, Syr. Ipecac, Alum. Sulf. and Morph. Sulf. Whiskey 2 oz. daily." The case of George D. McKinzie, age 43, admitted in 1874, would delight the most avid medical student: "Great enlargement of the abdomen. Tapped with withdrawal of 54 pints of pale yellow fluid." The briefest history noted was that of H—— O——, age 29: "Imbecile. No special treatment." Of H—— B——, age 50, admitted October 1871, the doctor recorded, "Suffers from all forms of neuralgia known. Pains all over. Remains in bed most of time. Hypodermic injections of pure water give relief."

One feels deep sympathy for the doctor who took care of John Rafferty, age 50, admitted in 1878. The valiant Esculapian records: "Symptoms convulsions and opisthotonus. Blister along spine. Application of cold. Hypodermics of Morphine. Enemas. Large doses of Potassium Bromide. Died. Diagnosis: Spinal meningitis." Consider the horror of having to treat an acute surgical condition by external manipulation in that day when to open the abdomen was to sign the patient's death warrant! James Cleary was admitted October 29, 1878, with a diagnosis of strangulated hernia. "When admitted," the doctor writes, "had been suffering several days from constipation and pain in abdomen. Next day condition worse, commenced vomiting. Examination showed small inguinal hernia in right groin. This produced so much pain was compelled to chloroform when hernia was easily reduced. Notwithstanding which, intestinal destruction still continued in spite of injection of warm oil. Stercoraceous vomiting ensued. He died November 6, 1878."

In 1876, there was an epidemic of dysentery at the Soldiers Home. Between July 21 and October 16, sixty-eight cases were treated of which 17 died; a mortality of 25 percent. This was unparalleled in the brief history of the institution. The Home doctor was at a loss to account for this scourge. According to the medical notions of that time, most disease was caused by poisonous gases emanating from swamps, marshes, stagnant ponds and accumulations of filth. Yet Soldiers Home and its surroundings appeared to be highly salubrious. In fact, Old Point Comfort, only a short distance away, was famous as a health resort, even boasting a hotel named after Hygeia, the Greek goddess of health. Dr. Wright had promptly resorted to the standard treatment of that time, which consisted of an initial dose of castor oil followed by laudanum, Dover's powder, opium pills, fomentations to the abdomen, soothing enemas and greatly restricted diet. While ready to admit that the epidemic was probably caused by some mysterious "combination of atmospheric and local causes," Dr. Wright pointed out that "quite a number of those who died were hard drinkers. . . It is well known that such persons are in a state of definite predisposition to attacks of the liver and bowels. I am very sorry to say that in this as in every other form of disease they paid a heavy penalty for their degrading indulgences."

However, a Catholic priest from Old Point Comfort who acted as chaplain to the Home members of his faith had a somewhat different view. In Father Hastie's opinion, the men were dying because of the bungling and neglect of Dr. Wright! And the priest made no secret of his opinion. In fact, he snatched the bandmaster from the care of Dr. Wright and hustled him over to a hospital in Norfolk. In great indignation, Dr. Wright pleaded with Father Hastie to cease his damaging criticisms, but to no avail. In desperation the doctor appealed to the Governor of the Home, asking that the priest be barred from the Home until the epidemic had subsided. By way of professional backing, Dr. Wright called in a doctor from Hampton, who submitted a report which approved the treatment given and praised the cleanliness of the hospital and the adherence to hygienic principles. This consultant, Dr. Selden, concluded by saying, "With the advent of cold weather, I hope your arduous labors will cease and that you will never again have another visitation." And in truth, there was only one more dysentery death, that of a patient who entered the hospital October 24 and died November 3. It happened that he also had been an enthusiastic worshipper at the shrine of Bacchus. This fact was not lost upon Dr. Wright, who wrote with scarcely concealed satisfaction, "The past history of this man's life gives some insight into the character of the disease. He is reported by those who knew him well to be a reckless drinker. Sold his house last spring for 800 dollars and was

drunk continually as long as the money lasted. This kind of life poisoned his liver and induced what is known as cirrhosis or gin liver. His attack of dysentery brought on inflammation of this region and result is known. He died from exhaustion produced by the copious stools, the result of long and continued intemperance."

Alcoholism was ever a problem in the Soldiers Home. This could be expected with an aggregation of several thousand uprooted men with time on their hands and a certain amount of money. The United States Government was grateful to all who had fought to save the Union. Prodded by the various veterans' organizations the Government had granted liberal pensions to the disabled Union veterans. To combat alcoholism, the authorities of the Home established a Beer Hall. This was somewhere around 1880, we are told. It was their theory that if the men could have a few peaceful glasses of beer on the Home grounds they would be less inclined to patronize the numerous saloons on the outside. The Beer Hall flourished for a number of years, but it was eventually attacked by temperance organizations, which saw little or no difference between beer and whiskey. In his report of 1906, the Governor of the Home contended that the Beer Hall protected the members against the "vile compounds" sold on the outside. It was his custom, Governor Knox said, to close the gates of the Home for five days following the payment of the pensions, "for the safety of those members who cannot resist temptation and would squander their pensions." However, the public hue and cry against the Beer Hall continued and eventually it was abolished.

In the summer of 1899, Soldiers Home had another epidemic and this time it was not dysentery. As the Home doctor observed the lemon-yellow color of the patient's bodies, the black vomitus and scanty, dark urine loaded with albumin, a horrible suspicion came into his mind: yellow fever! Autopsy revealed characteristic changes in the liver, kidneys, and heart, and black masses of altered blood in the stomach. Experts from the Marine Hospital Service confirmed Dr. Vickery's diagnosis. Most of those stricken were from the Main Building (the old Chesapeake Female College) where about 550 men were living. A rigid quarantine was clamped on the Home. No one could enter or leave, not even the dead. Those who died were buried inside the Home, where their graves may be seen to this day some 400 feet east of the Hampton Gate on Harris Avenue. Fearing a repetition of the terrible yellow fever epidemic of 1855, which had taken several thousand lives in Norfolk and Portsmouth, many of the residents of Phoebus, Hampton and Newport News fled by boat and train. *Harper's Weekly*, which was the equivalent of *Life* magazine today, ran a picture of a crowd of people trudging along the railroad track, having been unable to board the overcrowded trains.

Dr. Vickery moved the men out of what he considered the "most infected barracks" to tents. At one time he had 1,500 men in 350 tents. The buildings, including the hospital, were treated with sulfur vapor, bichloride of mercury and formaldehyde. All bedding, which could not be "disinfected" by fumigation or boiling, was burned: 446 mattresses, 773 pillows, 157 blankets, 62 sheets, 33 pillow cases, 32 bedspreads, and 6 rubber blankets. Fortunately, the epidemic turned out to be less severe than expected: 43 cases with 12 deaths. Dr. Vickery believed it was because he got the well men out into tents and encouraged them to stay in the open air. It was his opinion that abundant fresh air and sunlight made the disease less active. He thought that the infection had probably been brought in from Cuba by some infected article of baggage. During the quarantine Governor Woodfin provided ball games and fireworks to distract the Home members. However, some men escaped into Phoebus with the Home guards in hot pursuit. On September 15, 1899, the

quarantine was lifted and life returned to normal. It was not until late 1900 that Dr. Walter Reed and his associates, working in Cuba, were able to prove that yellow fever was carried from one infected person to another by a mosquito and not by articles of contact.

In 1910, there were about 2,265 members, of whom some 10 percent were Negro. Of the foreign born, the Irish and Germans were the most numerous. The Civil War veterans were now being diluted by Spanish-American War veterans. The average age of all members was 68.6 years. The Governor was the supreme authority. The members wore blue uniforms similar to those of the Civil War days. They were organized into companies which were designated alphabetically. The dormitories were called barracks and a captain and a sergeant were in charge of each barrack. The men were summoned to the dining hall by bugle calls. They were required to be in full uniform and they did not begin to eat until a bell was rung. The grounds of the Home were graced with a profusion of flowers, shrubs and trees, which made a vivid impression on the many visitors. There were three entrances: the present Phoebus Gate, which was served by a street car line, the Hampton Gate, which led past the Hampton section of the National Cemetery, and another one called the Main Gate, which was somewhere between the other two.

Most of the supplies for the Home came by steamer from New York, Philadelphia and Baltimore, there being a pier at the mouth of Jones Creek. There was a hotel for the convenience of relatives and friends of the members. The Ward Memorial Theater had well over 1,000 seats. It was visited by professional touring companies presenting the current hits of the Broadway stage. The general public, which came from all around, had to pay admission to these performances, but the Home members were admitted free. As today, there was a well-stocked library, a restaurant, a store and a news stand. The Band gave frequent concerts in the bandstand, which were attended by officers and soldiers from Fort Monroe, students from Hampton Institute and residents of Phoebus, Hampton, and Newport News.

The hospital, in the early part of this century, had a capacity of about 250 patients. It had a staff of five doctors: a Surgeon and four Assistant Surgeons, as they were called. They all had military titles such as major, captain and lieutenant and they wore blue military uniforms, as did the other officials of the Soldiers Home. There were "11 female trained nurses" and "22 male nurses". The hospital was a large two-story building with spacious verandas, for, when it was built in 1885, great importance was attached to sunshine and fresh air as healing agents. There was a separate building for tuberculous patients, but no facilities for mental patients, these being sent to Washington. In November 1918, during World War I, the Hampton Soldiers Home was taken over in its entirety by the U. S. Army for use as Base Hospital No. 43. All of the old veterans who could be safely moved were transferred to Soldiers Homes in other parts of the country. This caused great anguish among them. One who had been sent to Johnson City, Tennessee, decamped from that place and made his way back on foot.

In April 1920, the Hampton Soldiers Home reverted to its former management. The old veterans were overcome with joy to be brought back to the blissful retreat on the shore of Hampton Roads! And now to the mixture of Civil and Spanish-American War veterans was added the new element of World War veterans. In 1930, all of the Soldiers Homes in the country were merged with the Veterans Bureau to form the Veterans Administration. The attire of the officers of the Veterans Administration was a compromise between the military and the civilian: military cap, white shirt, black four-in-hand tie, double-breasted blue serge suit and black shoes. However, the doctors had no military titles. Even in the days be-

fore World War II the doctors of the Hampton Veterans Administration maintained close relations with the local medical profession through membership in the Virginia Peninsula Academy of Medicine. In fact, one of the three founders of this fine organization, which is still going strong, was Dr. Frank S. Bacon of the Hampton Veterans Administration. The present hospital, Building No. 110, was opened in the autumn of 1938. For a number of years it was the largest and finest hospital building on the Lower Peninsula. During World War II the Hampton installation remained in the hands of the Veterans Administration, but the physicians, surgeons, and dentists were given commissions as officers in the Army of the United States and put into uniform. After the war the uniforms were doffed and since then the doctors have worn whatever their fancy dictates. The institution's last Civil War veteran died in 1946. He was the 101-year-old Charles Woodcock, born 1845, who served as a private in the First New York Veteran Calvary from 1863 to 1865.

Within the confines of one short hour we have compressed a hundred years of medical history. We have seen the devoted doctors who went before you at this place struggling valiantly against overwhelming diseases, whose secrets had not yet been unlocked by medical science. Today the James Cleary who died of necrosis of the bowel in 1878 would be taken to a superbly equipped operating room and he could have been saved. In the 1870's, to open the abdomen was to cause death. Today here in this building you not only open the abdomen with impunity but the chest as well. Antibiotics now overcome diseases which were then vainly treated with purges, blisters and poultices. The physician has at his command such innovations as the cardiac monitor and the defibrillator. The x-ray clearly delineates conditions which your predecessors could only surmise from inspection, palpation, percussion and auscultation. Where formerly there was only one laboratory test, namely, the examination of the urine performed by the doctor himself, there is today an automated laboratory manned by technologists, performing innumerable determinations of great delicacy.

In 1870, the aim of General Butler and the Board of Managers was to provide an agreeable haven for the disabled veterans. That they succeeded is evident from the following item in *Leslie's Illustrated Newspaper*, May 9, 1885: "The Home at Hampton, situated in close proximity to . . . sunny, salubrious Old Point Comfort . . . ministers to . . . about 1,200 old defenders of the Union. The veterans are well cared for in this quaint, sunny and sleepy place. . . The unrivaled facilities for saltwater bathing, boating, and fishing tend to preserve the health and occupy the minds of inmates; and the amusements include billiards, bowling, dramatic representations, concerts and lectures. One hundred and thirty flower-beds are kept with 65,000 choice plants and flowers." Today the Hampton Veterans Administration Center is still a garden spot, but now you strive to rehabilitate the disabled veteran and to restore him to the community. To this end your doctors, nurses, physical therapists and social workers labor as a team.

One hundred years ago the lone doctor at the Soldiers Home hospital had all he could do to keep pace with disease, let alone try to delve into the secrets of its mechanisms. Today, you here at Veterans Administration Center have an imposing program of research. Physicians, surgeons, and dentists engage in clinical studies, assisted by an able Medical Illustration Service. Your psychologists operate a Research Unit on Aging. Your Medical Research Department has at its command, I am told, a Radio-Isotope Unit, a Pulmonary Function Unit, an atomic absorption spectograph for determining trace metals, a body plethysmograph for detecting a tendency to emphysema, a gas chromatograph for detecting minute changes in fat, to mention only a few ingenious apparatuses. Not even a Jules

Verne with a medical degree could have imagined all of these things a century ago!

My thoughts go back to your hospital of one hundred years ago, which consisted essentially of a building, some beds, a few nurses and a lone doctor, dependent on his five senses for diagnosis and a handful of crude and largely ineffective remedies. Then I think of this Veterans Administration Center of today with all its sophisticated equipment and its army of professional, administrative and maintenance workers. Perhaps in 2070 some one will stand here in my place to recount the story of one hundred years of progress. Let us hope that the contrast between 1970 and 2070 will be as great, or even greater, than the contrast between 1870 and today!

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Cannibalism and the New Milestones in Medicine

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Kuru, a disease peculiar to the cannibals of New Guinea, may introduce the theory of "slow virus", and help to explain other diseases of unknown etiology.

THANKS TO THE FORE PEOPLE of the Highlands of New Guinea, new milestones in medicine are laid.

Until 1936, when Mr. Ted Ubank, a gold prospector, set his foot in the eastern Highlands of New Guinea, the whole world was unaware of the existence of two million human beings on the face of the second largest island on the earth just north of Australia. The curly-haired dark-skinned people there likewise did not know what was beyond the hills in sight. Very much human, the people on the island had over 100 cultures and spoke over 500 languages, one of which was Fore. The interior of the island accommodated the Fore-speaking population with remarkably unusual traits. The females and the young male children slept in small houses away from the grown-up males who passed their nights in a central men's house. Matings took place during the day in the open. The people wore no clothes but did use varied ornaments: animal bones and pig tusks hanging from the hole of the septum of the nose decorated the face whereas the rings of feathers and shells, of human fingers removed from the dead, and of bones, hair and even testicles of dogs and pigs—the only animals existent, adorned the rest of the body. The primitive inhabitants of stone-age culture living in over 150 villages were always at warfare with their neighbors and this limited their travel strictly within their language area.

It sounds unbelievable but as recently as mid 1950s the Fore were cannibals; the "naked ape" consumed the flesh of a fellow human being. As a customary solemn act of mourning to express affection and respect for the deceased, the Fore ate the bodies of their dead relatives. After the loved one was dead, the mourners removed the brain and the visceral organs and cooked briefly by steaming them in bamboo cylinders. The females and the little boys ate the flesh. The adult men and the older boys refrained from consuming it because of the superstitious belief that the practice dampened their fighting ability.

The Fore suffered from a condition called kuru (a word in Fore language meaning shivers from cold or fear) which accounted for over half of the total deaths. This invariably fatal condition, non-existent anywhere else in the world, mostly affected the females and young boys. The cause of the condition, according to the local natives, was spiteful black magic practiced by one of their own men possessing the knowledge of the art of such magic. By augury the people decided the guilt of the practice of sorcery. The unlucky mortal, always a grown-up boy or an adult male, to whom the wrongdoing of kuru sorcery was ascribed, was then assaulted and battered to death. This sort of reprisal murder, a ritual called tukabu, was the most common cause of death in men and it helped balance the male-female ratio offset by kuru which predominantly killed the

females. The fear of extinction of the females by kuru before they grew up led the men to get the girls married in their childhood to polygamous older men so that they could be rushed into pregnancy before they died of kuru.

With the entry of Europeans in the 1950s and their continuous contact with the Fore, the times changed and the culture changed; the European patrol posts banished the local practices of cannibalism, tukabu, child marriage and warfare with the neighbors. And with the entry of medical men, the disease, kuru, became known to the medical world; in 1957, Dr. D. Carlton Gajdusek and Dr. Vincent Zigas first described this "new" disease.[1] The disease was so common there that a native afflicted with it would diagnose it without mistake and even a child just developing clumsiness in walking would rightly predict his demise within a year. The patient of kuru starting with tremors and disturbed balance would go about the activities in a clumsy fashion until the ability to walk is impaired. He would grin and grimace and often turn euphoric and laugh but would always remain mentally alert. The disease would lead to inability to chew or swallow and the sufferer, always left alone unassisted in the house in the terminal stage, would no longer fight to live.

Dr. Gajdusek, who is now at the National Institute of Health, has been so intrigued by kuru that he has dedicated his life to the investigation of this disease since he discovered it. He literally walked hundreds of miles in New Guinea searching for the cases of kuru and has now registered all the existing cases numbering over 2000. Years of investigations of these cases strongly pointed to the possibility of cannibalism, which included eating of even kuru victims, as a leading causative factor. A high incidence of the disease in the cannibalistic females and children, and the changing pattern of the disease since its discovery, more significantly the fall in its general incidence and virtual disappearance of the disease in children, with the abolition of cannibalism, strengthened this concept. Genetic basis could not adequately explain this familial disease and the laboratory studies ruled out bacterial and other causes. The pathologic changes in the brain, the only organ affected in kuru, did not give any clue as to the cause of this disease. With the assumption that cannibalism was a causative factor, Gajdusek pondered over several questions. Is virus a transmitting agent in kuru? If kuru is caused by a virus, is the disease transmissible? The incubation period, the phase in the development of disease between the infection and the first appearance of the symptoms, of kuru is four to 10 years. In view of this observation, is kuru caused by a slow virus? The Fore method of cooking of human organs for consumption, in bamboo cylinders, attaining temperatures of only 90 to 95 degrees centigrade at the elevation of over one mile above sea level was unlikely to inactivate the virus. Therefore, the field of virus research was wide open. Gajdusek and his associates inoculated various tissues and fluids from kuru patients in a large variety of experimental animals such as monkeys, gibbons, baboons, rats, mice, hamsters, rabbits and guinea pigs. These experiments bore no results. Then, in 1963, a chimpanzee, a fast disappearing species and one of the most expensive experimental animals was chosen.[2] Eight animals were inoculated intracerebrally with suspensions of brain from kuru patients. All eight chimpanzees developed kuru-like disease after incubation periods of 18 to 38 months. More recently kuru has been transmitted from chimpanzee to chimpanzee and from chimpanzee to spider monkey.

These experiments associate kuru with cannibalism and indicate that the disease transmitting agent is a virus. The disease still killing over 100 people per year should therefore disappear completely if the cannibalistic practices are totally and permanently abandoned. With the fact that kuru has been transmitted from man to

chimpanzee, from chimpanzee to chimpanzee and from chimpanzee to spider monkey, the proof is at hand that this disease is the first chronic brain disease in man of demonstrated virus cause and it is the first viral disease of man transmitted to laboratory animals. The prolonged incubation period of kuru lends strong support to the theory of "slow virus" which means the viruses may sit within us for a long time before actually doing the damage. These new milestones are perhaps the first clues to the solution of many of the puzzling diseases of unknown etiology. They also make us aware of the possibility that we may be under attack, all the time, from slow viruses.

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Let's Reminisce!

Dress Reform is most vitally necessary for the working classes. Wear a long waist, accurately fitted to the figure, to which are buttoned the skirts by distinct rows of buttons for each. Shoulder straps for supporting skirts will not take the place of full waist, as by their use the weight is brought upon two small points and becomes intolerable. This form of dress can be as neat and trim as when the corset and bands are used.

(Portion of Report on Diseases of Women and Children, Transactions of The Medical Society of Virginia, 1889).

Miscellaneous....

Case Presentation of the Surgical Committee Meeting, The Memorial Hospital, Danville, Virginia.

This patient is a 27-year-old Gravida II, Para II, Aborta 0 white female who was admitted to the hospital with recurrent menorrhagia. The patient had a D. & C. in 1969 for menorrhagia. Because of persistent menorrhagia, she was admitted to the hospital on 3-2-70 for a vaginal hysterectomy. The hysterectomy was undertaken on 3-3-70. The patient had an uneventful operative and postoperative course and was discharged on 3-9-70 asymptomatic. Postoperatively, it was noted that her hematocrit fell from 40 to 33. Postoperatively, she was placed on Terramycin, 250 mgs. q.i.d. p.o. On 3-11-70, she arose in the morning and passed a large clot through her vagina. She was brought to the Emergency Room where she was examined by her physician who found a small area of bleeding on the anterior lip of the vaginal cuff. The vagina was packed. The patient was admitted to the hospital. She continued to bleed and, for this reason, she was taken to surgery where under general anesthesia the vaginal cuff was sutured. In spite of this, she continued to bleed throughout 3-12-70 and received multiple transfusions of whole blood. On 3-13-70, blood coagulation studies were undertaken. Her prothrombin time was 100%, platelets 180,000, prothrombin consumption time 34 seconds, partial prothrombin time 24 seconds, clotting time nine minutes, and bleeding time two and a half minutes. Because she continued to bleed, she was taken to surgery where exploratory laparotomy and bilateral internal iliac artery ligation were undertaken. At surgery, a large retroperitoneal pelvic hematoma was found. The hematoma was evacuated but, because of persistent oozing, packing was placed in the denuded area. A portion of the packing was brought out through the vagina. The patient received approximately 18 units of whole blood from the time of admission on 3-11-70 until the termination of surgery on 3-13-70. The pelvic packing was slowly removed on 3-15-70 and 3-16-70. She made an uneventful recovery from this surgery and was discharged asymptomatic. Postoperatively, she again was placed on Terramycin intravenously and Terramycin, 250 mgs. q.i.d. p.o.

Dr. Morrison, how do you feel concerning the efficacy of doing vaginal hysterectomies in premenopausal women?

Dr. Morrison: I myself prefer to do abdominal hysterectomies in premenopausal women and vaginal hysterectomies only in patients who are postmenopausal. I have found that bleeding can be a considerable problem in young women and prefer to avoid this complication by doing only abdominal hysterectomies.

Dr. Turner: I personally do many vaginal hysterectomies in premenopausal women and have found bleeding not to be a serious problem. The patients seldom require any transfusion, and I personally feel that age is not a contraindication for a vaginal hysterectomy.

Dr. Striker, would you make some comments concerning the adequacy of coagulation studies after transfusion of whole blood? Would you also make some comments concerning the role that laboratory medicine might play when a surgeon is confronted with a bleeding problem, either during an operation or postoperatively.

Dr. Striker: In most cases, the patient who has undergone surgery will have had a complete blood count which includes observation for the character of erythrocytes, leukocytes, and platelets as well as appropriate comments on their numbers. The



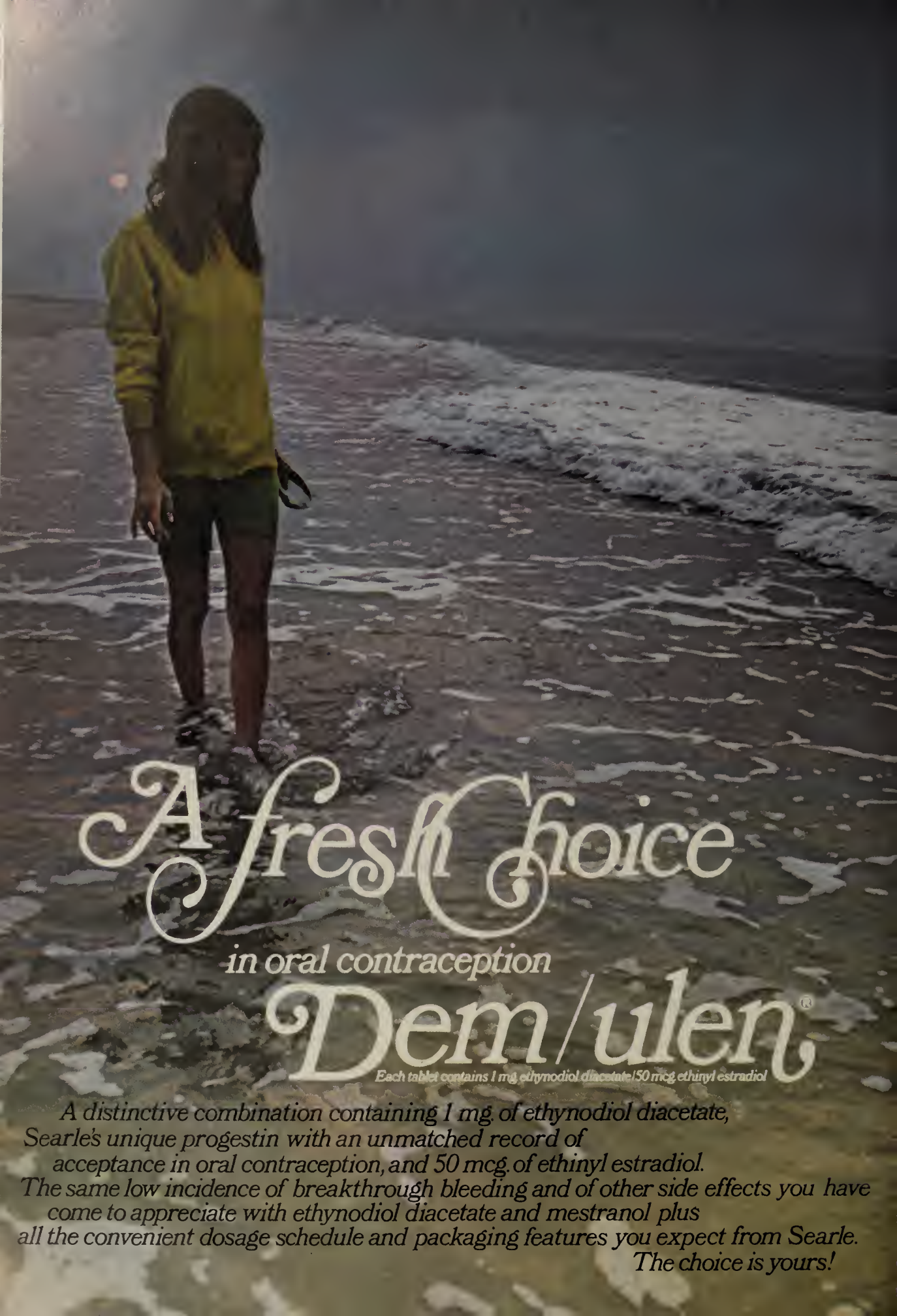
CALORIES / 7 oz. Serving*

Beef Broth	22	Vegetable	68
Consommé	29	Tomato	69
Chicken with Rice	43	Cream of Asparagus	70
Chicken Gumbo	48	Cream of Chicken	76
Chicken Noodle	54	Cream of Mushroom	115
Cream of Potato	58	Green Pea	116
Chicken Vegetable	60	Cream of Shrimp (Frozen)	132
Vegetable Beef	66	Bean with Bacon	133

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Special note: Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product. The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision. Long-term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency of some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can be neither affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.



Indication—Demulen is indicated for oral contraception.

Contraindications—Patients with thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia and undiagnosed abnormal genital bleeding.

Warnings—The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism and retinal thrombosis). Should any of these occur or be suspected the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis and embolism and the use of oral contraceptives. There have been three principal studies in Britain[1-3] leading to this conclusion, and one[4] in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll[3] was about sevenfold, while Sartwell and associates[4] in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as nonusers. The American study also indicated that the risk did not persist after discontinuation of administration, and that it was not enhanced by long-continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions medication should be withdrawn.

Since the safety of Demulen in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period.

A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—The pretreatment and periodic physical examinations should include special reference to the breasts and pelvic organs, including a Papanicolaou smear, since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. Endocrine and possibly liver function tests may be affected by treatment with Demulen. Therefore, if such tests are abnormal in a patient taking Demulen, it is recommended that they be repeated after the drug has been withdrawn for two months. Under the influence of progestogen-estrogen preparations preexisting uterine fibromyomas may increase in size. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam adequate diagnostic measures are indicated. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. Any possible influence of prolonged Demulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Demulen therapy. The age of the patient constitutes no absolute limiting factor, although treatment with Demulen may mask the onset of the climacteric. The pathologist should be advised of Demulen therapy when relevant specimens are submitted. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

Adverse reactions observed in patients receiving oral contraceptives—A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism and cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions; neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals and mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption and itching.

The following laboratory results may be altered by the use of oral contraceptives: hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test and pregnanediol determination.

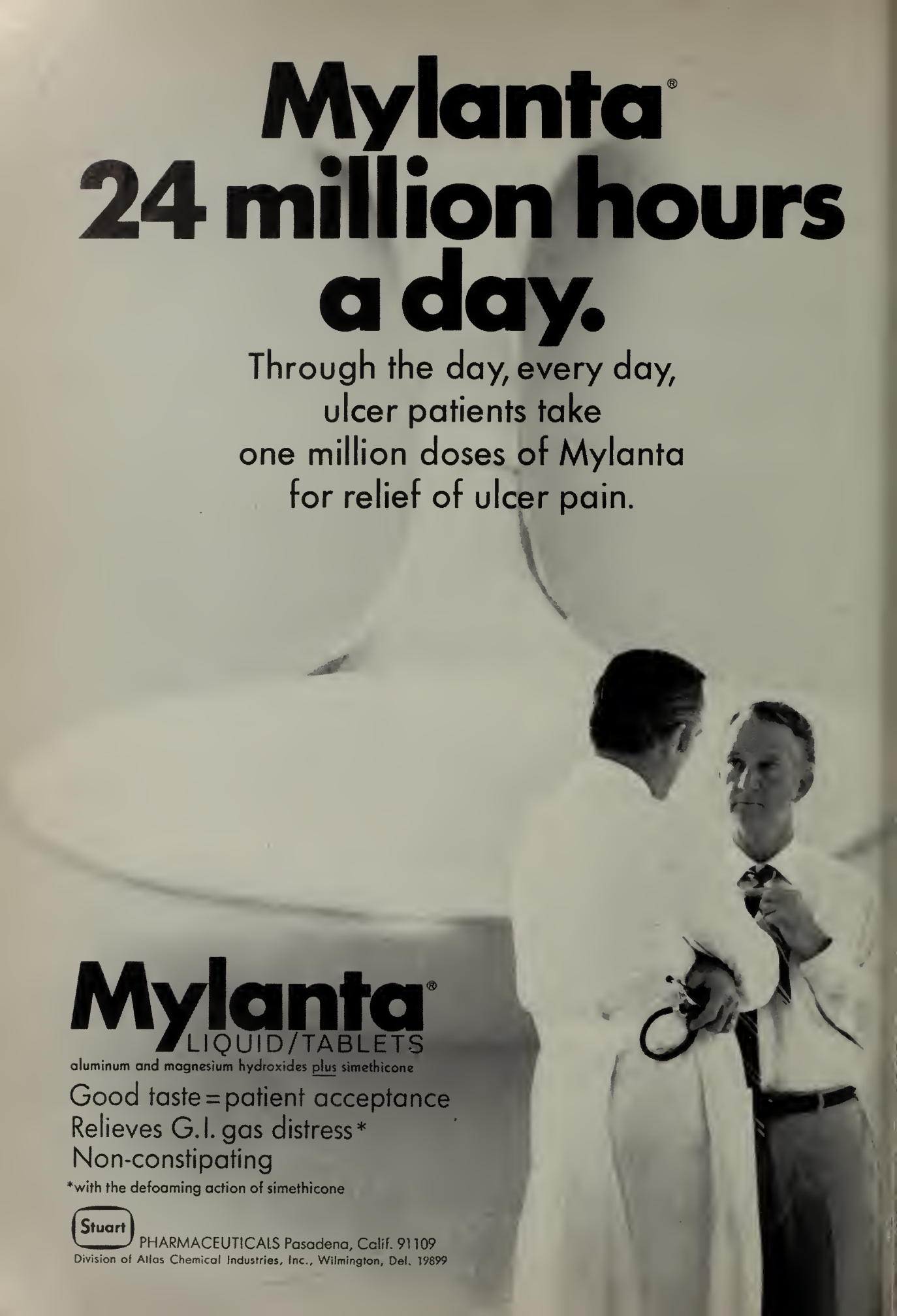
References: 1. Royal College of General Practitioners: Oral Contraception and Thrombo-Embolic Disease, J. Coll. Gen. Pract. *13*: 267-279 (May) 1967. *2.* Inman, W. H. W., and Vessey, M. P.: Investigation of Deaths from Pulmonary, Coronary, and Cerebral Thrombosis and Embolism in Women of Child-Bearing Age, Brit. Med. J. *2*:193-199 (April 27) 1968. *3.* Vessey, M. P., and Doll, R.: Investigation of Relation Between Use of Oral Contraceptives and Thromboembolic Disease. A Further Report, Brit. Med. J. *2*:651-657 (June 14) 1969. *4.* Sartwell, P. E.; Masi, A. T.; Arthes, F. G.; Greene, G. R., and Smith, H. E.: Thromboembolism and Oral Contraceptives: An Epidemiologic Case-Control Study, Amer. J. Epidem. *90*:365-380 (Nov.) 1969.

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majority of bleeding problems at surgery usually relate to the inadequacy of physical hemostasis by the operative team. In some rare instances, all too traumatic to patients and surgeons, a previously unknown coagulopathy will become manifest during surgery. It is imperative that an adequate sample of blood be obtained for the Laboratory prior to any attempt at replacing the blood loss. This pre-tranfusion blood can be used for coagulation studies which will probably extend into the post-surgical period because they are necessarily long, step-wise tests, frequently involving two or more hours. The only rapid test available at present is a semi-qualitative determination of the fibrinogen level (fibrindex by orthodiagnostics or laboratory prepared topical thrombin) which is most applicable in obstetrical quarters but does in some cases constitute a surgical problem. If blood has been given to the patient prior to withdrawal of a blood sample for laboratory coagulation studies, no abnormalities will be detected. This is true because coagulation factors in concentrations as low as 10-20% of normal will result in normal test times. What to do next? Replace any or all of these factors up to at least that 10-20% level by administering one to two units of fresh, frozen plasma or fresh whole blood. Fresh, frozen plasma can be thawed and administered in a matter of 20-25 minutes while obtaining fresh whole blood would take considerably longer, depending on the availability of donors. If previous coagulopathy is known, any of several new factor concentrates, for example, hemophilic factor or factor VIII concentrates, can be available both during surgery and for postsurgical administration. It is also important to remember that in severe hemorrhage due to trauma or to some untoward surgical event that massive transfusions of the stored bank blood when given in a relatively short period of time (10 units over a 24-hour period) may result in a severe thrombocytopenia due to the low functional platelet content of stored bank blood. I cannot overemphasize the necessity of a complete history and physical examination prior to surgery. It is at this time that bleeding tendencies or congenital coagulation defects such as hemophilia, secondary disease states, cirrhosis, or drug therapy such as anticoagulants are encountered and proper precautions taken.

Dr. Turner, I know that during the initial phases of this patient's bleeding problem that the possibility of acquired fibrinolysis, hypofibrinogenemia, or disseminated intravascular coagulation entered your mind. Since these are not common problems in obstetrics, would you discuss them?

Dr. Turner: Acquired fibrinolysis and hypofibrinogenemia are among the most severe hemorrhagic problems of pregnancy. Although unusual even in pregnancy these problems are observed most frequently in our specialty.

The two major theories are hypofibrinogenemia and hemorrhage arising secondary to the release of thromboplastic material into the maternal circulation which causes diffuse intravascular clotting or the so-called defibrinogenation syndrome, and secondly, that enhanced fibrinolysis is the primary cause and defibrinogenation is of secondary importance.

Since therapeutic approaches may vary according to the primary cause and these most often occur concomitantly, it is important to try to establish the exact pathogenesis in a given case.

The usual precipitating factors of either defibrinogenation or fibrinolysis in obstetrics are abruptio placenta, the dead fetus syndrome, amniotic fluid embolism, missed abortion syndrome, and massive blood transfusions. The clinical picture is that of massive uterine bleeding with one of the above diagnoses as well as G.I., G.U., nasal, and puncture site bleeding and hematomas. These entities can occur antepartum, intrapartum, or immediately postpartum and are dangerous at any time.

The activation of fibrinolysis can result from an obstetric situation resulting in rupture of uterine vessels and extravasation of blood into the myometrium and release of tissue extracts into the maternal circulation resulting in intravascular coagulation, shock, bacterial infection with Schwartzman reactions.

The simplest laboratory methods to detect hypofibrinogenemia are a clotting time and fibrinogen level or fibrindex. The simplest laboratory technique for establishing fibrinolysis is observation of a clotted tube of blood for clot lysis. Other sophisticated measurements are of little value in the differential diagnosis since the various measurable blood factors are essentially the same in both entities. One test of limited use is a platelet count which is usually low in the defibrinogenation syndrome and normal in fibrinolytic coagulation defects. Treatment initially of both these entities consists of whole blood replacement which in the less major abnormalities will correct coagulation deficiencies; this should be associated with emptying the uterus of the products of conception in the most efficacious manner and with considerable dispatch, preferably vaginally, but by C. section if necessary. If this therapy is ineffective and hypofibrinogenemia is felt to be the primary contributing factor to hemorrhage, four grams of fibrinogen should be given I.V. as rapidly as possible especially if the fibrinogen level is shown to be low, that is, less than 100 mgs. per cent. Higher dosages may be given if deemed necessary, but one must realize a 5 to 25% instance of serum hepatitis following fibrinogen administration. A newer modality in the treatment of defibrinogenation due to intravascular clotting is the use of Heparin which prevents further depression of the fibrinogen level of inhibiting intravascular coagulation. This is usually utilized when fibrinogen has been administered and a normalized clotting time is again deteriorating. It is administered in an I.V. drip of 10 to 20 thousand units every 24 hours. The amount of Heparin necessary for adequate therapeutic anticoagulation in this particular syndrome is approximately one-half that necessary to therapeutically anticoagulate the blood. If clot lysis is initially observed and if the clotting observation tests fail to show clotting after four grains of fibrinogen, then significant fibrinolysis may be assumed to be present. Treatment with E.A.C.A. (Epsilon aminocaproic acid) is indicated as a fibrinolytic inhibitor. Its usual administration is four grams. I.V. the first half hour and then one gram per hour for 12 hours. It may be given along with fibrinogen. E.A.C.A. readily crosses the placental barrier and it may enhance thrombosis formation when used in states consisting primarily of intravascular coagulation and although it is a valuable drug, it should only be used as absolutely indicated and preferably postpartum. All the above modalities are extremely important; however, the most important for ultimate survival are evacuation of the uterus and whole blood replacement as soon as practicable. These factors plus medical management of the coagulation defect make operative intervention seldom necessary, but hypogastric artery ligation and hysterectomy are still part of the obstruction armamentorium in the prevention of irreversible shock in these two coagulation defects associated with pregnancy.

Dr. Melnick, the urologist often sees severe postoperative bleeding and may occasionally see a patient suffering with either fibrinolysis of intravascular coagulation. Would you comment on your experience in these areas?

Dr. Melnick: The urologist occasionally encounters rather severe postprostatectomy hemorrhage. In my experience, fulguration of a bleeding vessel will cure the majority of these problems. However, there are a small number of patients who have a true coagulopathy and who present a difficult problem with diagnosis and management.

The two causes of this infrequent hemorrhagic syndrome are fibrinolysis and disseminated intravascular coagulation. There have been reports pointing out that prostatic tissue, particularly carcinoma of the prostate, contains high level of tissue activator of fibrinolysins. On this basis, it was suggested that the diffuse bleeding syndrome seen following transurethral resection of the prostate was due to the release of this tissue factor and activation of the fibrinolytic system with resulting clot lysis. However, recent reports have thrown doubt upon frequency of this entity. When patients with this postprostatectomy bleeding are carefully studied, most show a thrombocytopenia, shedding of R.B.C. from the clot, decreased concentration of fibrinogen as well as decreased concentration of multiple other clotting factors. These findings are consistent with disseminated intravascular coagulation and not fibrinolysis. The differentiation between fibrinolysis and consumption coagulopathy must be made so proper therapy can be instituted. Unfortunately, a patient with such a diffuse bleeding disorder faces a life-threatening emergency, and the decision to treat cannot be deferred until lengthy laboratory procedures are completed. I, therefore, do only a handful of rapid tests before making a clinical decision to start therapy. Blood is drawn, placed in a tube, and taped to the bed so the clot can be carefully observed. In addition, blood is sent to the laboratory for measurement of platelets, fibrinogen, and fibrinolysis. If the patient has a marked hypofibrinogenemia and thrombocytopenia, I institute treatment for disseminated intravascular coagulation with Heparin and fibrinogen. If these levels are not markedly depleted, and there is evidence for fibrinolysis, I will start treating with Epsilon aminocaproic acid. This agent neutralizes urokinase and thereby prevents the lysis of clots formed in the prostatic fossa. With rapid institution of appropriate therapy, we are now usually able to overcome what used to be a major postoperative complication.

Dr. Nevin: I prefer to think of these from three major factors: (1) A massive consumption of coagulation factors and platelets in a hemostatic effort. (2) Dilution of hemostatic elements by massive blood transfusions with stored blood. (3) Destruction of clotting factors by preteolysis. I would like to make a few comments concerning what Dr. Melnick and Dr. Turner have said. First of all, it appears that pregnant women are prone to intravascular coagulation when their course is complicated by bacteremia. This is due to high levels of factors II, VII, and X in their circulating blood. Also some investigators feel that manipulation of tissue rich in thromboplastic material may cause intravascular coagulation. The uterus, prostate, lung, and ovaries are tissues which contain high concentrations of this fibrinogen activator. Some patients will develop a generalized breakdown of their hemostatic ability after acute hypotension, the etiology of this is not known but it is most frequently seen after cardiac arrest.

I would like to clear up a few other confusing points. After massive transfusions, there is a definite thrombocytopenia after eight units of blood. This does not become clinically appreciable as a bleeding phenomena until after approximately 14 units of blood. Patients with healthy livers quickly replace VIII and V so that they are not a problem in post-transfusion bleeding. However, they can be a problem in patients with hepatic disease or children.

There are several other entities which have not been discussed but which should be mentioned for they can be responsible for operative and postoperative bleeding. Patients with dysproteinemia states have abnormal platelet function. This is because the platelets become covered with the protein. Secondly, it has been my distinct impression through the years that a hematoma

formation overlying surgically traumatized tissue may be responsible for late bleeding. The exact mechanism for this is unknown, and I am not exactly sure that it is an entity. Work has been done by Roberts who has shown that a fibrin film is deposited between the hematoma and the underlying tissue and that following this there is a leukocyte migration. Leukocytes contain many anticoagulant factors and fibrinolytic factors which in turn may be released and cause clot lysis and exacerbation of bleeding from the surgical wound. Again, this is an area that requires further investigation.

Dr. Silverman, would you like to summarize this presentation by discussing how you evaluate a patient preoperatively and operatively for bleeding difficulties?

Dr. Silverman: Preoperatively, I order a prothrombin time and partial thrombin time on my patients. If these are normal, I have quickly eliminated hemophilia and the parahemophilias as coagulation entities. Von Willebrand's disease can be excluded by a normal bleeding time. If I encounter serious bleeding during the operation or postoperatively, I order a clot lysis time and ethanol gelatin test. If normal, they eliminate hyperfibrinolysis as a cause of bleeding. I am then left with a disseminated intravascular coagulation syndrome which will respond to intravenous Heparin at dosages which would not interfere with normal coagulation.

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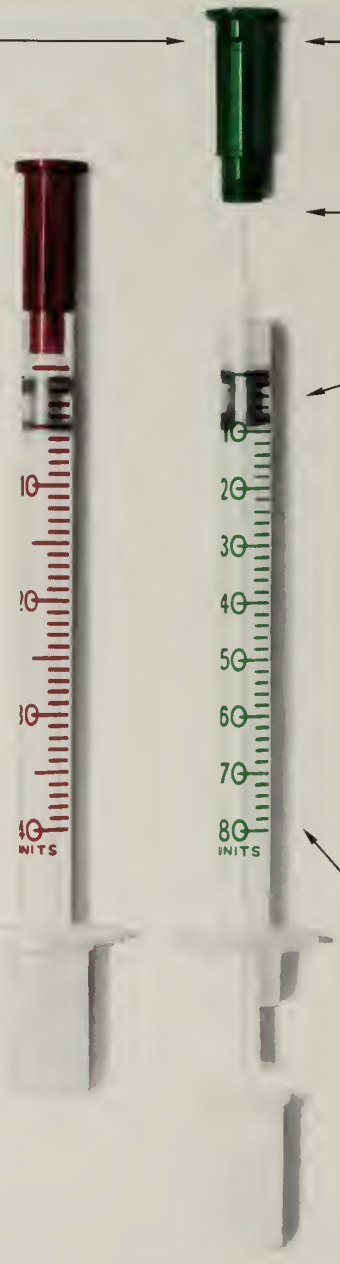
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Diagnostic Laboratory Medicine....

BARBARA KIPREOS, M.D.
MARIO R. ESCOBAR, Ph.D.

Australia Antigen and Its Significance in the Laboratory Diagnosis of Viral Hepatitis

Studies of viral hepatitis have long been hampered by the inability to grow a virus in tissue culture and the lack of any reliable immunological tests until Blumberg and coworkers discovered in 1963 an antigen (Australia antigen or Au) in the blood of an Australian aborigine during a systematic investigation of sera from people all over the world. It first was thought that Au was an example of a genetically determined trait. More extensive investigation, however, showed that Au is intimately related to hepatitis virus. Although not universally accepted, many feel that Au itself is a virus which causes hepatitis in some individuals who are infected with it. Recently, the names "hepatitis antigen", "SH antigen" and "hepatitis-associated antigen" have also been used synonymously with Au.

Current views of the natural history of viral hepatitis have also changed. Viral hepatitis should be seen as a spectrum of clinical manifestations depending upon the interaction between host and infectious agent. This spectrum can range from an extremely susceptible host, who develops fulminating hepatitis and dies, to a persistent carrier having no clinical disease. In between these two extremes are: (1) the patient having the typical acute hepatitis with jaundice and high serum glutamic-oxalo transaminase (SGOT) having Au transiently in his serum before the acute phase, (2) the anicteric patient with chronic hepatitis having minimal if any clinical evidence of the disease, but who continues to excrete Au in the feces, and (3) the patient without any evidence of the disease following infection and who experiences only a transient viremia. Viral hepatitis, both the infectious (hepatitis A or IH) and the serum (hepatitis B or SH) types, like poliomyelitis, is basically an infection of the intestinal tract. Further, like polio where the central nervous system may escape detectable injury, the liver clinically in certain individuals with Au in their blood and feces may not be involved. During the early incubation period, the virus replicates in the intestinal tract. Fecal excretion of the virus is detectable in the middle of the incubation period and reaches a peak just before the clinical symptoms of the disease occur and then decreases rapidly. The characteristic feature of this infection is the extremely long period during which the virus is present in the body before the onset of clinical symptoms. Viremia follows the same pattern of increase and rapid decrease. Giles and Krugman concluded from the results of their studies that IH and SH are caused by related viruses with different incubation times. They called these agents IH virus, MS-1 or short incubation (15-40 days) type and SH virus MS-2 or long incubation (40-160 days) type, respectively. Even though the incubation period may be a distinguishing characteristic of the two agents, overlap is too great to be of practical value in clinical diagnosis. Recently, Blumberg and associates have proposed the elimination of the IH or SH terminology or other names based on clustering of cases or length of incubation period. Instead, they suggest simply to indicate whether a particular case or outbreak of hepatitis is or is not associated with Au realizing that the Au test can be used for the diagnosis of cases transmitted either parenterally or by other means. The relationship of Au to IH is somewhat controversial. For instance, Prince, as well as

Giles and associates, failed to detect Au in their studies with experimentally induced IH, whereas Blumberg and his colleagues reported a significant number of IH cases associated with Au. Gocke and Kavey, Okochi and Murakami found no remarkable differences in the recovery of Au from patients with either IH or SH.

Giles and Krugman reported that a differential diagnosis between IH and SH can be made by determining IgM during the early phase of the disease: IgM is increased in IH three to four days after the rise in SGOT, while there is only slight if any rise in IgM in SH.

Individuals who have been transfused many times can carry in their blood specific antibodies against Au. This same anti-Au can be produced in rabbits by immunizing them with serum from a hepatitis patient with the antigen in his blood. Subsequently, the rabbit serum is absorbed with normal human serum without Au. The resultant serum has ideally only anti-Au (1) activity.

Au (1) is sometimes found in patients with different types of leukemia. Blumberg and Levene found in serial testing one such patient with leukemic reticulo-endotheliosis, whose serum gave inconsistent results with anti-Au (1). Serum from this patient was injected into a rabbit and anti-Au (2) was formed after absorption with normal human serum. In testing both antisera it was found that both have two specificities, one of which is shared by both antisera. These identities and dissimilarities of specificities were shown by the formation of spurs in Ouchterlony immunodiffusion experiments. Anti-Au (1) has been found to be associated with hepatitis carriers, patients with chronic anicteric hepatitis, and in several conditions such as in Down's syndrome and individuals receiving frequent renal dialysis. Anti-Au (1) is less useful in detecting blood donors with Au (1) in their serum, as in the United States only 0.1% of the general population has antigen in their serum. However, in Japan and other Asian countries it is more common, and anti-Au (1) is used in Japan in the blood banks to screen donors. Rather recently, Gocke reported that the sera of four of 11 patients with acute polyarteritis nodosa contained Au. They found deposits of the antigen in the blood vessel walls—a finding not usually associated with hepatitis. In two of his patients it was found first in the early acute phase of polyarteritis persisting for at least 11 and 18 months, respectively. In the other two, Au was first detected in serum samples obtained two and five years after the acute illness.

Blumberg and Levene used anti-Au (2) in the blood banks in the Philadelphia area, where professional donors are used, and it gave a 7.1% positive reaction (total tested 293, 21 positive), which is thought to reflect the Au (2) carrier state in that area among professional blood donors. The same sera which reacted with anti-Au (2) did not react with anti-Au (1). Au (2) detection is very high in acute viral hepatitis, in institutionalized patients with Down's syndrome, in employees of institutions for mentally retarded patients (known to have a high frequency of hepatitis), and in thalassemia or other patients who have received a very large number of blood transfusions.

Blumberg and coworkers isolated the Au (1) from human serum by ultracentrifugation in sucrose and cesium chloride density gradients, column separation and proteolytic enzyme digestion. Their observations by electron microscopy, confirmed by others, revealed particles of about 20 mu consisting of subunits of 3 mu in diameter each. These doughnut- or sausage-shaped particles aggregated when mixed with anti-Au (1) antibody suggesting that the antigenic material is usually on the particles themselves. Further details on the biophysical properties of Au (1) have been recently reported by Gerin and associates.

Presumptive laboratory diagnosis of viral hepatitis can be made on the basis of liver function tests such as bilirubin, serum

glutamic-oxalo or glutamic-pyruvic transaminases, and lactic dehydrogenase which increase during the course of the disease and return to normal with recovery. The albumin/globulin ratio is also altered with an increase in globulins (hypergammaglobulenemia) and decrease in albumin. Serological tests currently available for the detection of either Au (1) or anti-Au (1) in the blood of patients with both IH and SH are the agar-gel diffusion (AGD), and complement fixation (CF). Both of these are now offered by the Virology Laboratory of the Medical College of Virginia. In addition, all donors at the Blood Bank of the Medical College of Virginia are being screened using the AGD procedure. The sensitivity of the AGD technique is significantly lower than that of the CF and also requires a longer incubation time before results can be obtained. However, it is easier to perform.

Furthermore, the CF test permits the detection of another group of patients with hepatitis not detected by AGD—that is, those individuals whose sera have anticomplementary (AC) activity coincident with their hepatitis. The duration of circulating AC activity has been shown by Purcell and coworkers to be approximately equivalent to that of Au in patients with Au-positive hepatitis, but its concentration was lower. They suggest that AC activity may reflect the presence of immune complexes of Au and anti-Au or another serologically distinct antigen and its antibody.

Approximately 100 specimens from blood donors have been tested at the Medical College of Virginia and all have been found to be negative for Au in the absence of AC activity. However, the results from 100 patients suspected of having viral hepatitis revealed 8% AC activity and 4% positive CF for Au. Of these 100 patients, three were positive for Au within a two-week period. Two were heroin addicts with Au titers of 1024 (Negro male 20 years old), and 2048 (Negro male 19 years old), respectively. The third patient was a house-staff physician who had viral hepatitis (Au titer of 2048), the type of which could not be determined clinically as IH or SH. The past history in this patient suggests either or both the parenteral or nonparenteral transmission routes.

Since patients are first suspected of having viral hepatitis on the basis of abnormal liver function tests, by this time the Au titer has already reached an undetectable level according to the currently available CF and AGD procedures. Therefore, the need for more sensitive tests is obvious. In this regard, several procedures are under evaluation at this time. These are the radioimmunoassay reported by Walsh and associates using Au-I^{125} which offers sensitivity up to 100 times higher than that of the CF. Another method is that of immunoelectrodiffusion using paper discs soaked with Au and anti-Au in agarose gel on a glass slide subjected to electrophoresis at 4°C. This test as described by Duquesnoy offers the advantage of sensitivity as well as speed with 300 sera being tested in a two-hour period. Prince has recently reported on the new immunoelectroosmophoresis test in which the antigen migrates in the electric field, while antibody migrates by osmosis, since gamma globin has no electric charge at pH 8.8. According to Prince, this test is roughly equivalent in sensitivity to the CF, though face-to-face comparisons of the two methods have not yet been made. The advantage of immunoelectroosmorphoresis is speed; that is, 200 tests consume about three working hours. Slide agglutination tests using inert particles or tanned RBC's coated with either antigen or antibody would be practical provided they offer reasonable degrees of sensitivity and specificity.

In summary, the Au serological tests should be adjuncts to the liver function tests for use in the differential diagnosis of hepatitis. Multiple serum specimens should be tested at periodic intervals starting as early as possible after onset of symptoms in order to increase the probability of detecting Au.

In cases where there is a positive test for Au in the presence of abnormal liver function tests, a presumptive diagnosis of viral hepatitis can be made. Nevertheless, definitive confirmation of the diagnosis should only result after a positive liver biopsy has been ascertained. The latter has been improved by fluorescent antibody techniques for Au.

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Let's Reminisce!

If You Have a Fatiguing, Deaf Patient to Talk to,

Place the ear piece of your binaural stethoscope in the patient's ears and talk into the chest piece, and you have an excellent ear trumpet.—*Railway Surg., May 21.* (Reprinted from the Virginia Medical Monthly, June 1895).

Public Health . . .

MACK I. SHANHOLTZ, M.D.
State Health Commissioner of Virginia

Drinking Water in Virginia

An adequate supply of safe and preferably palatable water for drinking and general domestic purposes is certainly one of the most important necessities for the health and well-being of the human race. Today it is of great concern to public health authorities because of the threats to the quality of natural waters brought about by an ever-expanding technology which is introducing into the environment innumerable new substances, many of which are known to be toxic. Added to this are the enormous increase in population and the strong tendencies toward massive concentrations of people in comparatively small areas of the total land mass.

In Virginia water supplies for drinking and domestic use may be categorized as public, semi-public, and private. Public water supplies are those for municipalities, counties or portions of counties, unincorporated communities, and some industrial establishments; they service approximately two-thirds of the total population of the state. Semi-public water supplies are separate supplies for establishments catering to the public, such as motels, restaurants and summer camps. The term "private" is generally used to designate supplies for single family residences, or a small supply serving 15 or less connections.

Public Water Supplies

Title 62.1 of the Code of Virginia gives the State Board of Health the responsibility to exercise general supervision and control over public water supplies insofar as the sanitary and physical quality of waters furnished for drinking or domestic purposes may affect the public health; authority is also given to exercise reasonable control over excessive quantities of mineral or chemical constituents which would adversely affect palatability or general suitability. Within the Department of Health the responsibility for public water supplies is assigned to the Bureau of Sanitary Engineering of the Division of Engineering.

As of June 30, 1970, there were 1159 public water supplies in Virginia; they range in size from those serving small housing developments up to those for the largest cities and urbanized areas.

The larger supplies use water obtained from surface sources, and they require full treatment to remove or destroy bacteria, viruses, silt, clay or other particulate matter, and other substances which cause objectionable tastes and odors. This process commonly takes the form of treatment with coagulant chemicals followed by a period of sedimentation and filtration through sand or other suitable media. Disinfection, usually by application of chlorine, is employed as a final treatment; taste and odor removal may require the use of oxidizing chemicals or by absorption of the objectionable substance on activated charcoal.

There are approximately two hundred public supplies where the water used as a source is sufficiently clear and free from pollution that disinfection with chlorine is the only treatment required. For a limited number of other supplies, treatment is provided for the removal of excessive hardness or iron.

The largest number of public water supplies in Virginia, over seven hundred, are of comparatively small size which do not require continuous treatment of any kind, as water is obtained from one or more wells which produce clear water that is free from

dangerous bacterial or viral content. When wells of this sort are properly constructed and the water protected from contamination, supplies from such sources can be expected to continue being safe with a minimum of attention except for routine bacteriological sampling and testing.

Wells in some parts of the Commonwealth, particularly the southeastern area, produce water that is highly mineralized, much of which contains fluoride at concentration levels high enough to cause dental fluorosis. Much of the mineral content of waters from wells in Southeastern Virginia comprises the salts of sodium and potassium and no really satisfactory or economically feasible method for their removal has been developed.

On the other hand, fluoride chemicals are added for protection against dental caries to the water of some fifty supplies in Virginia, plus the District of Columbia supply which serves portions of Northern Virginia. The number of citizens served by these supplies is estimated at 2,700,000, which is 62% of the total population. This puts Virginia quite close to the top in percentage of people to whom artificially fluoridated water is supplied.

Program of State Health Department For Public Water Supplies

The program of the Bureau of Sanitary Engineering in public water supply supervision may be divided into two major phases: the design of facilities; and the operation of existing installations and the testing of waters as furnished to the public.

As regards the former, plans, specifications, and other pertinent information are submitted to the Health Department for examination and approval before authorization of construction and operation of the waterworks. The material submitted is examined in order to determine that the proposed facility will be capable of producing water of the required quality, and that it can be operated in a satisfactory manner without undue difficulty.

For supplies involving well water, standards for well location and construction are supplied by the Health Department and well sites are inspected for approval prior to drilling of the well. After a well has been drilled, the permanent pump installed, and the well disinfected, it must be sampled and tested for coliform bacteria for a sufficient period of time to demonstrate that the well water is of satisfactory quality before it is approved as a source of supply.

In the supervisory phase of the public water supply program, engineers from the Health Department make periodic visits to waterworks to determine that required standards are being met. At the time of such visits, samples of water may be collected for various tests to be made in the public health laboratories of the Department. Almost 2,000 such visits were made and 19,381 water samples were tested during 1969-70.

Recently, there has been much concern over the discoveries of mercury and its compounds in the water environment of the nation. In cooperation with the State Water Control Board samples are being taken and analyzed from selected public water supplies; to date no significant quantities of mercury have been found in any public water supply tested.

Semi-Public and Private Supplies

Within the Health Department, the Division of Local Health Services carries out responsibilities for semi-public and private water supplies, with the actual services being conducted by the individual local health departments.

Minimum standards have been developed for semi-public supplies, which include not only construction criteria but also specific numbers of bacteriological samples to insure purity. The local sanitarian approves the site, and maintains surveillance over construction and bacteriological sampling before the supply is formally approved and

recorded as being suitable for public consumption.

The local sanitarian is responsible for individual water supplies on an advisory basis except for the location of the supply in relation to any form of pollution. Private supplies are usually drilled, driven, or bored wells; however, springs and cisterns may have to be considered. The sanitarian selects the well site so as to insure that any form of pollution is the required distance away from the water supply and flows away from the water supply.

New Laboratory Facilities

A new State Consolidated Laboratory Building is just being completed which will provide space for all the laboratories of the State Department of Health including public health, industrial hygiene, radiological health, and the medical examiner's system. Increased capability for water analysis will be available in the new building, and there will be greater opportunity to share instrumentation. One of the most immediately useful will be atomic absorption, which is an official method for barium, copper, iron, manganese, silver, and zinc. A special technique using this instrument is presently the method of choice for determining mercury at fractional parts per billion level. The specific ion electrode technique would be available if needed.

For organic materials, gas chromatography and infrared spectroscopy will be available, as will quantitative emission spectroscopy and fluorescence spectroscopy if needed. The radiological health laboratory will be able to determine all of the alpha beta or gamma emitters, and the gamma spectroscopy instrument could be used for neutron activation analysis by having a sample irradiated in a research reactor such as the one at the University of Virginia.

Monthly Report of Bureau of Communicable Disease Control

	Sept. 1970	Sept. 1969	Jan.-Sept. 1970	Jan.-Sept. 1969
Brucellosis	—	4	23	41
Diphtheria	—	—	1	—
Hepatitis	143	52	1,082	349
Meningitis (Aseptic)	87	3	130	14
Meningococcal Infections	—	3	39	55
Poliomyelitis	—	—	—	—
Rocky Mt. Spotted Fever	9	22	55	75
Rubella	33	19	714	1,633
Rubeola	14	1	1,985	676
Tularemia	1	—	5	4
Typhoid Fever	—	1	3	1
Rabies in Animals	12	18	188	327
Venereal Diseases:				
Syphilis	155	110	1,071	1,048
Gonorrhea	1,441	1,261	10,745	9,304
Other	5	6	23	38

Medicare (Part B)....

JESSE L. LYNN
Philadelphia, Pennsylvania

In January, 1969, Wilbur J. Cohen then Secretary of Health, Education, and Welfare announced that the supplementary medical insurance program premium would be maintained at $8.00 for the period July 1, 1969, to June 30, 1970, ($4.00 from the insured and $4.00 from the Federal Government). This decision would have far reaching effects on the amounts paid to physicians, practitioners and suppliers under the program for this period. It was not an easy decision to make. Secretary Cohen acted in the face of actuarial advice that physician's fees were likely to increase substantially in 1969 and 1970. The Secretary concluded that the maintenance of the combined $8.00 premium required cooperation of both the physician and patient to be effective. He solicited, by letter, the cooperation of physicians and suppliers to show voluntary restraint in connection with fee increases.

His request was followed by instructions to the fiscal carriers to implement a program of restraint on increasing the customary fees of physicians and suppliers. The carriers were instructed by the Social Security Administration to consider charges as "reasonable" based on 1968 levels of charging. Although carriers were instructed to "hold the line" on fee increases, the Social Security Administration was sensitive to the possibility that certain inequities would arise. As a result, guidelines for ameliorating these inequities were issued. The guidelines provide that a charge which exceeds the customary charge of the physician who rendered the medical service, within prevailing charges in the locality, may be found to be reasonable. Carriers were cautioned that this could occur only in highly unusual situations. The following factors were to be considered in any upward adjustment of fees: (1) The time that has elapsed since the last change was made. (2) The size of the requested increase and the relationship of the new and old charges made by others for the service. (3) Increases in operating expenses may be considered when they are substantially above those resulting from general economic factors and the uniqueness of the situation is substantial.

While these are not the only factors which could be considered under the exception, they illustrate the kind of analysis required in deciding whether a customary charge should be adjusted.

Fees have continued at 1968 levels after July, 1970, because of pending legislation which affects the amounts paid under the Medicare Program. Probable enactment of this legislation prompted the Social Security Administration to instruct carriers to continue temporarily the existing levels of reimbursement of physicians and other suppliers of medical services under Part B of Medicare.

Based on instructions issued in April, 1970, carriers had begun the operations needed to convert charge data accumulated in 1969 into new customary and prevailing charges that would be applicable beginning July 1, 1970. The limitation on prevailing charges was to be set at the 83rd percentile or its equivalent, i.e., the level of customary charges made by 83 percent of the physicians in the locality.

In the meantime, the House of Representatives passed on May 21, 1970, a bill which directs the establishment of prevailing levels at the 75th percentile in reimbursing for Medicare services provided during the

Jesse L. Lynn, *Regional Representative, Bureau of Health Insurance, Philadelphia, Pennsylvania.*

twelve months period that begins July 1, 1970.

After consultation with carriers, representatives of the medical profession, and the Health Insurance Benefits Advisory Council, the Social Security Administration decided to avoid confusion for beneficiaries and providers of services by postponing any changes in present levels of reimbursement until the issue has been considered by the Senate. The Senate is expected to complete action on the bill in the near future.

Immediately upon enactment of pending legislation the Social Security Administration will issue new guidelines to Medicare Carriers. These guidelines will permit the recognition of 1969 charging patterns in determining payments under Medicare.

Highway Accidents

The pedestrian who crosses a street between intersections, who crosses at intersections against "don't walk" signs, who assumes all drivers are super-alert and super-considerate—he's no hero. He's a chump.

The 1970 edition of the annual booklet of highway accident statistics from The Travelers Insurance Companies, shows that crossing between intersections proved fatal last year to more than 4,040 pedestrians. Even at intersections, more than 2,190 persons were killed. The third major cause of pedestrian fatalities in 1969 was walking on rural highways. Some 1,400 lives were snuffed out here.

Many of these of the third category contributed to their own deaths by wearing dark clothes while walking at night or walking with their backs against traffic. Wear light colored clothing at night, walk facing traffic, cross only at intersections, AND with the traffic light. These are weary admonitions—but widely ignored. Why? Because "it can't happen to me!"

The Medical Society of Virginia . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was held on Sunday, September 20, at Society headquarters.

Members Present: Dr. William Grossmann, Dr. James M. Moss, Dr. F. Ashton Carmines, Dr. Dennis P. McCarty, Dr. Harry J. Warthen, Dr. Thomas S. Edwards, Dr. Raymond S. Brown, Dr. William S. Hotchkiss, Dr. William R. Hill, Dr. George J. Carroll, Dr. John A. Martin, Dr. James C. Respess, Dr. William D. Liddle, Jr., Dr. Carl E. Stark and Dr. Carl P. Parker, Jr.

Others Present: Dr. Arthur A. Kirk, Third Vice-President; Dr. William J. Hagood, Jr., Vice-Speaker; Dr. W. Linwood Ball and Dr. W. Callier Salley, AMA Delegates; and Dr. Kinloch Nelson, Dean, Medical College of Virginia.

Society Sponsored Tours

The recent "Orient Adventure" sponsored by the Society was reported as a tremendous success. As a result, numerous requests have been received for similar trips in the future.

Mr. Robert Threlkeld, representing International Travel Advisers, presented a proposal for two trips in 1971. The first would be a return to the Orient in July and the second would feature a Mediterranean air-sea cruise in October.

Council was then presented additional proposals from Travel Dynamics and Tour-Plan International. It was agreed that all three proposals were excellent.

Dr. Stark moved that the matter of a travel program in 1971 be referred to the Executive Committee of Council for final disposition. *The motion was seconded and carried.*

Utilization Review

Dr. James R. Brayshaw discussed with Council some of the problems connected with utilization review—a present day requirement for those facilities which provide services under Medicare. Actually, two kinds of review are required: (1) a review of each case of continuous extended duration; and (2) a review of samples of admissions, duration of stays and professional services provided.

Dr. Brayshaw was most concerned with the sample review. Reviews of this type emphasize identification and analysis of patterns of patient care in order to maintain consistent high quality.

It was brought out that review systems presently available provide data not necessarily pertinent and, because of coding requirements, quite burdensome on administrative medical staffs.

Dr. Brayshaw then presented a proposal for an information system designed to make sample reviews easier and more efficient for all concerned. He expressed the hope that Council would look with favor on his efforts and approve his plan to contact hospitals over the State concerning possible implementation.

Dr. Parker moved that Council approve Dr. Brayshaw's efforts and indicate that it detects no violation of the principles of medical ethics in his plans to contact hospitals over the State. The motion made clear, however, that such approval should not be construed as putting The Medical Society of Virginia on record as endorsing the proposed sample review system. *The motion was seconded and carried.*

Committee on Specialty Society Presidents

The growth of specialty societies in recent years has resulted in an alleged splintering of the medical profession and subsequent decreased effectiveness where legislative bodies, insurance carriers, the public, etc. are concerned. Consequently, it has been proposed that a special committee composed of Presidents of the various specialty groups be appointed and that the President-Elect of The Medical Society of Virginia be designated as its Chairman.

The purpose of the committee would be to achieve more unity among the various specialty groups. It would provide a forum for the discussion of mutual problems and their relationship to each other and to The Medical Society of Virginia. The committee would also serve in an advisory capacity to the Council and House of Delegates.

Some concern was expressed over the fact that the Presidents of the various groups change each year and, consequently, the committee would have little continuity. This prompted the suggestion that perhaps the Secretaries of the various groups could play some part in the committee's functions. A suggestion was also made that a permanent Secretary be considered.

Dr. Stark then moved that the proposed committee be appointed on an ad hoc basis with the under-

standing that one of its responsibilities would be to make recommendations concerning its future structure and possible inclusion among the standing committees of the Society. *The motion was seconded and carried.*

Five Digit Code

Council was requested to consider the advisability of asking Blue Shield and the commercial carriers to implement the new five digit coding system recommended by the American Medical Association Current Procedural Terminology. It was learned that the American Society of Internal Medicine is making a determined effort to have the five digit system implemented by all carriers.

Dr. Thomas Gorsuch stated that the insurance industry and organized medicine have agreed that a new system relevant to the practice of medicine today should be developed. Because of this need, the American Medical Association, in cooperation with the California Medical Association and various specialty societies, has developed the new Current Procedural Terminology (CPT). The new system features an expanded numerical system using five digits instead of four—thus giving greater latitude and leaving many openings for the insertion of new services and procedures which will undoubtedly be developed in the future.

It was learned that the American Society of Internal Medicine has also worked closely with AMA in developing the new CPT. The thought was expressed that the new system is not only desirable but also necessary if the services of all physicians are to be adequately and accurately described.

It was brought out that there are a variety of coding systems in use today—a cause of considerable confusion. The present Blue Shield code features four digits and is not considered adequate. Dr. Gorsuch emphasized the fact that the CPT only provides a common system for identifying services and is not set up as a relative value schedule or a means to determine fees. He also indicated that the CPT has been officially endorsed by AMA, the American Society of Internal Medicine and four state medical societies.

It was reported that Blue Shield of Virginia was reluctant to switch over to the new five digit code at this time for several reasons. A letter from that organization pointed out the importance of having all Blue Shield plans use the same system and also the considerable amount of money it would take to make the switch over.

Dr. McCarty then moved that the following resolution be brought to the attention of the House of Delegates on October 12. *The motion carried.*

> WHEREAS the need for a uniform system of coding and nomenclature in order to describe accurately the great variety of medical services has never been greater, and
>
> WHEREAS the American Medical Association has prepared an accurate and current system of coding and nomenclature, and
>
> WHEREAS state medical associations, specialty societies, and others have delayed their own efforts so as to be certain there would be one universal system of description of professional services, therefore be it
>
> RESOLVED that this House endorse the system of coding and nomenclature of the American Medical Association, and be it further
>
> RESOLVED that The Medical Society of Virginia urge Blue Shield of Virginia to adopt at its earliest convenience the AMA system of coding and nomenclature as the universal system for description of medical services.

Intermediate Care Nursing Homes

Dr. Samuel A. Graham, Jr., representing the State Department of Health, advised Council that the Department would like its support in an evaluation of services provided by intermediate care nursing homes to patients receiving public assistance. The State Department of Health is undertaking this project at the request of the State Welfare Department which in turn is seeking to comply with HEW policy.

Dr. Graham stressed the fact that the evaluation is related to care provided by the facility and not to the diagnosis and medical management of the patient. The purpose is to determine whether the care provided by the facility is consistent wtih the diagnosis and treatment outlined by the attending physician.

It was learned that the evaluation team will always have a physician in charge. While health officers will perform this function in many instances, it undoubtedly will become necessary at times to employ practicing physicians on an honorarium basis.

Dr. Edwards moved that the evaluation project be approved. *The motion was seconded and adopted.*

Obstetrical Care

The Committee on Maternal Health has called attention to the fact that many obstetricians are

faced with a real problem where the care of medically indigent obstetrical cases are concerned. Attention was called to the fact that the number of physicians, other than obstetricians, providing prenatal care and delivery, has decreased to such extent that virtually the full load of such care, both private and "service", falls upon private practicing obstetricians. It was the Committee's hope that the Society would explore ways and means of providing relief for the physician who must handle this increasing load of "service" work at the expense of his private practice.

During the ensuing discussion it was brought out that some thought is being given to bringing physician's assistants and nurse midwives more and more into the overall picture. It was also brought out that family physicians have, over the years, been discouraged from practicing obstetrics and that this has undoubtedly contributed to the present problem.

The suggestion was made that the matter be referred to the special Committee of Specialty Society Presidents which will soon be appointed. A motion to this effect was lost for want of a second.

It was then moved by Dr. Carmines that the Committee on Maternal Health be requested to consider the problem in depth and make known its recommendations at a future meeting of Council. *The motion was seconded and carried.*

Virginia Medical Monthly

Dr. Warthen advised Council that the Virginia Medical Monthly, in recent years, has been confronted with the problem of trying to balance increased printing costs against a drastic reduction of advertising revenue. He explained that during the middle 1950's the operation of the Monthly was very definitely in the black—its income sometimes exceeding expenses by as much as $9,000. Since 1960, however, the reverse has more often been the case.

The reduction in advertising was apparently the result of extensive Senatorial investigations of the pharmaceutical industry. All state society journals were affected and forced to adjust to the reality of reduced income. When advertising did begin to pick up, a new pattern developed which in many ways complicated the problem. A number of weekly medical newspapers and magazines made their appearance—offering nationwide circulation as an attraction to advertisers. As a result of mass advertising, these publications found it possible to reduce the cost to advertisers to only $10.00 per thousand pages. The problem can easily be seen when one realizes that state publications can only offer advertising at a cost of approximately $20.00 per thousand pages.

After explaining the operation of the State Journal Advertising Bureau, which handles national accounts for some thirty-four state journals, Dr. Warthen stated that there now exists a question as to whether the Virginia Medical Monthly should retrench in its present activities. One possible answer would be to reduce the number of pages devoted to scientific articles but the hope was expressed that the high quality of the Monthly could be maintained. Dr. Warthen felt strongly that the Monthly has an obligation to the Society to publish not only articles of scientific interest and value, but also articles of historical medical interest, Committee reports, notices and programs of State and local meetings, etc.

Miss Watkins indicated that advertising rates for the Monthly would be increased in 1971—a step which should do much to increase our income. It was pointed out, however, that inflation seems still to be with us and it is difficult to predict just what its effect will be. It is also difficult to predict what other state journals will do as far as their advertising rates are concerned and this is a factor which cannot be overlooked.

A number of questions were raised concerning the operation of the journal, including the advisability of a joint effort with another state. The thought was expressed that perhaps by lowering the cost of advertising to $10.00 per 1,000 pages, the Monthly could attract more advertisers and partly solve its problem through volume. A question was raised as to whether there would be any advantage in sending the Monthly to all physicians in the State, regardless of membership, and thereby increasing the circulation to a point where it would be more attractive to more advertisers.

Dr. Warthen expressed the hope that Council will feel that any operating deficit is more than offset by the many services provided by the Monthly as the official publication of The Medical Society of Virginia. He stated that the Editorial Board believes the Monthly is well regarded by physicians generally and would like to continue its publication on the highest possible level.

Dr. Stark moved that Council support the efforts of the Editorial Board to produce a journal of high quality and that its wishes, as expressed by Dr. Warthen, be approved. *The motion was seconded and adopted.*

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International Certificates of Vaccination

The attention of Council was called to the fact that the Medical Society of the District of Columbia had recently become an official issuing agent of the physician's individual Uniform Stamp for International Certificates of Vaccination. These Stamps are required for authenticating all International Certificates and are valid for one year only. Several members had raised the question as to whether this is a service the Society should provide its members.

Dr. Graham stated that the Department of Health is currently providing this service. A suggestion was made that full details concerning this service be published in an early issue of the Virginia Medical Monthly.

A question was raised concerning the advisability of the Department of Health providing necessary vaccines to those preparing for travel abroad. This is currently done in some localities and no cost is involved. It seemed to be the consensus that some charge should be made—especially for those who are quite able to pay. It was agreed that there are some exceptions—namely dependents of service personnel, missionaries, etc. There were those who believed that providing this service to travelers put the Department of Health in the position of practicing medicine—something which should be avoided if at all possible.

Dr. Carroll then moved that the matter of providing vaccinations by the Department of Health be referred to the Society's Advisory Committee to the Department. *The motion was seconded and adopted.*

Insurance

The headquarters building of The Medical Society of Virginia is presently insured for $72,000. In view of increased building costs—up 19% since 1967—it is recommended that coverage be increased to $77,000. This figure represents approximately 90% of the replacement cost and the premium increase would amount to approximately $36.00.

A motion to approve the recommended increase was seconded and adopted.

Proposed Constitutional Amendments

Civic and professional groups over the State are being requested by "Virginians for the Constitution" to endorse a series of amendments which will revise the State Constitution. The thought was expressed that we are living in times of great change and the proposed amendments are necessary if the State's Constitution is to be brought up to date.

A question was raised as to whether such action falls within the purview of the Society. Some doubt was expressed that an endorsement would be in keeping with the purposes of the Society as set forth in its Constitution.

It was the consensus, however, that a professional association has an obligation to exercise civic responsibility on any issues affecting the entire State. Mention was made of the fact that some Virginia Congressmen had been mildly critical of the profession for not exercising such responsibility in the past.

A motion by Dr. Stark calling for the Society to support the proposed amendments to the Constitution was seconded and adopted. It was understood that this action by Council would be brought before the House on October 12. (FOLLOW-UP ACTION REPORTED IN ITEM 19.)

Rules of Procedure

The Rules of Procedure which will govern the House of Delegates on October 11 and 13 were reviewed and it was agreed that no changes appear necessary. *A motion to approve the Rules as presently constituted was seconded and adopted.*

In order to handle the many matters likely to come before Council on October 11, it was agreed that the meeting should start at 9:00 A.M. instead of 10:00.

Virginia Council on Health and Medical Care

Careful consideration was given a letter from Mr. Edgar J. Fisher, Jr., Director of the Virginia Council on Health and Medical Care. The letter pointed out that increasing demands are being made on this organization and, as a result, it is providing more and more services. The Virginia Council must depend on contributions from individuals and industry.

The Medical Society of Virginia has contributed to the Virginia Council for the past twenty years and its annual contribution since 1966 has been $4,000. Mr. Fisher expressed the hope that increased financial assistance could be provided.

Attention was called to the fact that only 466 physicians contributed to the Virginia Council last year—including only 13 who actually received placement assistance.

It was then moved that Mr. Fisher's request be referred to the Finance Committee with a recommendation that the Society's contribution be in-

creased to $5,000 if at all possible. *The motion was seconded and carried.*

Past-Presidents

The American Medical Association is presently considering a management training course designed especially for Past-Presidents of state medical societies. This course would be established for the purpose of preparing these, and other, medical leaders for possible appointments in government and other areas which require top administrative medical personnel. The AMA Board of Trustees has asked the various state societies to express their thoughts concerning this proposed course.

It was moved by Dr. Hotchkiss that the proposed course be approved in principle but that AMA be advised that The Medical Society of Virginia would like to have additional details concerning cost, time factors, etc. *The motion was seconded and carried.*

AMA Caucus

Dr. Moss reported that The Medical Society of Virginia was well represented at the annual meeting of the American Medical Association in Chicago and, as a result, all Reference Committees were thoroughly covered. He expressed the hope that this excellent representation would continue at future AMA sessions.

Association of American Physicians and Surgeons

The attention of Council was called to the annual meeting of the Association of American Physicians and Surgeons which will be held in Richmond from September 30-October 3. It was reported that a most interesting program has been planned and that many Virginia physicians might wish to attend.

Prescribing by Podiatrists

Council's attention was called to the fact that some podiatrists apparently are prescribing drugs which are available only through prescription and normally prescribed by physicians only. The problem was reported as serious enough to have caused considerable concern among physicians in one area of the State.

The feeling was expressed that there does exist a lack of communication between physicians and podiatrists and that an effort should be made to correct this deficiency. Dr. Carroll requested that the matter be referred to him in order that he might check back on State Board activity and arrange for such action as might be indicated.

Medicare Fees

During a recent meeting of the Society's Medicare Review Committee it was learned that very few physicians are aware that they cannot charge more than they did in 1968 when accepting assignments for Medicare patients. This fact has caused considerable confusion in the minds of many physicians and was brought to the attention of Council only as a matter of information.

National Drug Formulary

There is currently before the Congress legislation which would establish a national drug formulary. The American Medical Association has taken a strong position against such legislation and has requested the support of the Society. It was agreed that a national formulary compiled by the Federal Government is something medicine can do without. Such a proposal was viewed as further bureaucratic regulation and supervision of "indescribable complexity" and restrictive of both the rights of the prescribing physician and the patient he serves.

Dr. Brown then moved that The Medical Society of Virginia oppose the creation of a national formulary by the Federal Government and make its opposition known to Senator Byrd and Senator Spong. *The motion was seconded and adopted.*

Reconsideration of Constitutional Amendments

Dr. Edwards stated that since there were some questions concerning the responsibility of the Society to take a stand on the proposed amendments to the State Constitution he would move reconsideration of the matter. *His motion was seconded and adopted.*

Dr. Hagood expressed the fear that the Society might be setting a precedent which could well pose a problem in the future. For this reason, he thought it well to consider the advisability of leaving the final decision to the individual physician.

Following a recommendation that its previous action be rescinded, Council voted to sustain its original decision to support the proposed amendments.

Tumor Clinic

It was the recommendation of the Cancer Committee of The Medical Society of Virginia that the

Tumor Clinic of the Rockingham Memorial Hospital, Harrisonburg, be approved. *A motion to this effect was seconded and adopted.*

Medical School Crisis

Dr. Moss reported that the medical schools of Georgetown and George Washington were in serious financial condition. Their survival will depend upon Federal assistance and bills to provide such help have been introduced in both the House and Senate. Dr. Moss went on to point out that approximately 400 graduates of the two schools are practicing in Virginia, a fact which points up their importance to our State.

It was then moved by Dr. Edwards that The Medical Society of Virginia request the State's Congressional delegation to support legislation which would assist private medical schools in the District of Columbia. *The motion was seconded and adopted.*

Veterans Administration Hospital

It has been proposed that the McGuire Veterans Hospital, located on the southside of Richmond, be relocated adjacent to the Medical College of Virginia. The College has indicated that suitable land is available and apparently is willing to deed it to the Federal Government for this purpose.

In view of the fact that hearings are currently being held on the proposed relocation, it was suggested that perhaps The Medical Society of Virginia should offer its support. A motion by Dr. Martin calling for the support of the Society was seconded.

During the ensuing discussion it became clear that a difference of opinion existed concerning the proposed move. It was brought out that various veterans groups have opposed the relocation and that if any medical body is to take a stand it should be the Richmond Academy of Medicine.

A motion to table was then seconded and adopted.

There being no further business, the meeting was adjourned.

ROBERT I. HOWARD, *Secretary*

APPROVED:

JAMES M. MOSS, M.D., *President-Elect*

AMA Communications Institute

I hope that all of you read the report of the 1970 Communications Institute which appeared in August 17 issue of the American Medical News. Mr. Marvin Rowlands and his staff reported the pertinent subjects that were presented at the Drake Hotel, Chicago, August 6-7, 1970.

If you failed to read this report, just let it be a lesson to always read and re-read carefully every issue of this very important and informative publication. If you do not have this issue, you might write Mr. Rowlands for a reprint of this report.

I personnally feel that every member of the AMA and the constituent state chapters owe a debt of deep gratitude to Charles F. Lauer, Director of Communications, and Bernard F. Kroeger, Director of Program Services, for presenting such an excellent program. The three underlying themes of this meeting were—membership, leadership and communications. These subjects were so well covered in the AMA News that I will only give some personal comments regarding the meeting.

The Medical Society of Virginia was represented by Dr. Richard Palmer, AMA Trustee, Dr. James Moss, President-Elect, and your Public Relations Chairman.

Dr. Walter C. Bornemeier, President, AMA, opened the meeting with an address of welcome and really scored a field goal from the kick-off.

The morning's program of August 6 dealt with "Why I Should Be An AMA Member". This dealt with television news and institutional advertising campaigns purpose. It is impossible to portray the important facets of this program. I can only urge as I have in the past of greater attendance at these important meetings, but the speaker stressed the three basic principles of advertising: purpose, themes and media. He used three carousel projectors in unison and if there is any truth in the old Chinese proverb that one picture is worth a thousand words, then his presentation encompassed millions. I only wish we could have this presentation at one of our state meetings. He showed how his company had advertised Dial soap and Hallmark cards and how we could apply this same principle in presenting the marketing

of our medical services and accomplishments to our patients—the public.

The luncheon speaker was Mr. Walter Jihnson, Chairman of the Board of Myers-Infoplan International, Inc., who talked on "The Anatomy of Change". We look at the younger generation today with their dress, hair-do and so forth, but just remember this—"It isn't the hair style that counts, it's what is under that hair that counts." In this connection I am concerned with two words—the identity and the image of the physician. We are well aware of the identity of the American physician. He is the best trained practitioner of the science and art of medicine in the world, but the image in the eyes of the public is on a much lower level and it is up to each of us to bring this image up to the level that we know exists. This is our challenge. A challenge on what we live by when we are living our very best. What lies behind us and lies before us are tiny matters compared with what lies within us.

Dr. Max Parrott, Chairman, AMA Board of Trustees, concluded the first day's session with a discussion on "Goals and Priorities" in a true football terminology "To Lead or to Lose". "The AMA, you, and your fellow members in your societies must be active, reactive and aggressive. We either carry the ball now or we give up the game."

The Friday morning's session was interrupted by a hippie demonstration staged by members of the art class of one of the nearby universities. This demonstration was so perfectly timed and the acting was so superb that the audience didn't realize it was part of the prearranged program until it was explained by the moderator. The demonstrators emphasized such complaints as ghetto medical care, lack of adequate care in various areas and the erroneous statement that doctors are only concerned with remuneration for their services. Dr. Wesley W. Hall, President-elect, AMA, was the Luncheon speaker and his presentation was a fitting climax to a most successful meeting. He stressed the challenge that people are demanding action now in the health care field. The government has the resources to supply welfare care but it is up to us, the physicians, to supply the health care and we must do it now. I wish to remind you of another famous quotation, "I shall pass through this way but once. If there is anything good I can do, let me do it now, because I shall never pass this way again." To emphasize this let me quote a passage from the 5th chapter of St. Matthew, "Let your light so shine before men that they may see your good works and glorify your father who is in heaven and He will provide the match that will light the candle to illuminate the world to our aims and abilities."

In our attempt to achieve these goals let us not overlook the ideas and requests of the youths in our times. Just remember: Sam Colt patented the revolver at twenty-one, Graham Bell patented the telephone at twenty-nine, Mozart wrote his first composition at four, his first sonata at seven and his symphony at nine. Alexander the Great was King at twenty and conquered the world at twenty-seven. So the idea that the young are revolutionary, forceful and influential is not unique to our times.

I hope I have not bored you with my report of the 1970 Communications Institute or my personal remarks. I have presented it much like a fashion problem. I have combined a mumu, draping the entire subject, a bikini that covers only the essentials, a bra that covers the high spots, or a body stocking which reveals as much as possible and covers all parts of the subject.

John Wyatt Davis, M.D.
Chairman Public Relations

Woman's Auxiliary....



A Strong and Loving President

. . . Mrs. Reuben F. Simms of Richmond, the newly elected and installed president of the Woman's Auxiliary to The Medical Society of Virginia for 1970 to 1971. As president-elect, Grace visited 19 of the 24 component auxiliaries, attended the convention in Washington, D.C., in addition to four national meetings. Of the county auxiliaries Grace says, "I am deeply impressed with the earnest involvement of auxiliary members in community service. The quantity and quality of volunteer work rendered is staggering." Grace lives up to her name and radiates the warmth and charm of a gentle southern lady and simultaneously leaves no doubt about the depth of her community concern and her ability to accomplish the goals of the auxiliary.

Born in Henrico County, Grace was the oldest of nine children which probably helped formulate her philosophies in child guidance. This consists of "loving firmness, understanding, cultivation of high ideals and spiritual guidance which make an impact on one's life forever." Grace says that she is a child of the aftermath of World War I and the 1929 Depression. Her father owned a large dairy farm in Henrico County where Grace was born. The farm was built in or before revolutionary years and is a historic site. It is called "the Old Randall Place". Upon completion of high school Grace went to work and attended night school at the Richmond Business College.

Before Grace met and married Reuben Foster Simms, M.D., in 1952, her exposure to the medical world was limited to contact with her physician. She believes her husband's dedication to his profession, devotion to his practice and encouragement in her efforts has motivated her interest in the medical auxiliary and other volunteer work.

Grace has been a board member of the Woman's Auxiliary to the Richmond Academy of Medicine for eighteen years. She was the guiding hand determining the course for eight highly successful years with the annual "Antiques Show and Sale" sponsored by the auxiliary, which supports several of their philanthropic projects. She is an active communicant of the Emmanuel Episcopal Church and a member of the Women of Emmanuel in which she held several offices, past president of the Woman's Auxiliary to the Virginia Academy of General Practice, captain for the fund drive in multiple sclerosis for which she received a citation in 1968. For four years Grace was representative or alternate to the Richmond Council of Community Service Organizations and an active member of the Bellevue Garden Club to mention a few.

As president of the Woman's Auxiliary to the Richmond Academy of Medicine her goals for 1965 were much the same as her predecessors "for doctor's wives to become a force in presenting programs for community health into women's organizations".

The Simms have a lovely daughter, Joyce

and two granddaughters, Dianne, 17 and Suzan, 16.

The Simms have a river retreat for rest and relaxation near the Chesapeake Bay on Barnes Creek when they find a few hours in their busy lives to take advantage of it. They are a close fun-loving family. They also enjoy swimming and football games. When time permits Grace enjoys reading historical novels, and in general is fond of history.

Our president is a multifaceted woman of many interests who enjoys needlepoint, sewing, making jams and jellies, cooking southern style and cultivating flowers. Grace admits to being a bit frivolous and fun-loving and prefers to see the sunnyside of life. She enjoys a good joke and is quick with a quip. On the serious side of life she is a woman of deep religious convictions and is a very compassionate woman.

Grace's views about the condition of society and its environment were brief and concise. She answered "The incidence of crime, violence and environmental health is apalling. Individually and collectively we must work to save our country for future generations. I believe concerted efforts of women's organizations can do much to create effective legislation to protect us. The time is here and now to use our influence to persuade leaders of industry and government to clean up our air, water, land and cities to rid us of this blight on our modern civilization."

When queried about her views on teenagers she grew concerned and answered, "Today's teenagers are faced with problems and anxieties more complex than any others in the past. I believe parents and other concerned adults must learn to *listen* and *hear* what they are trying to tell us. Perhaps after we understand their fear of the future we can help them find themselves and gain positive direction. Our teenagers are the future!"

Our president expressed her objectives for the coming year will be to continue existing programs presented and executed in an effective manner. Grace would like all members to become involved in the problems of community health as the need exists in their respective communities.

Our president's theme for the Woman's Auxiliary to The Medical Society of Virginia will be "Health, Hope and Peace in the Significant Seventies". Doctor's wives more than other women are ever aware of the meaning of *health*, that it encompasses the physical, mental and spiritual being of us all. *Hope* is the inner flame within each person that should never be extinguished. Where there is hope there is incentive, initiative and a desire to learn. With knowledge comes creativity and power to understand. With understanding there is compassion, justice and love. With love comes *Peace*. Peace in the Seventies—an impossible dream?—no—but one that requires great effort. To quote a line from an ancient sage of a different ideology than our democracy, "the journey of a thousand miles begins with a single step" is one that we might find helpful as we go forward into the Seventies, stated Grace Simms, president.

Mrs. Hans J. Klapproth

Editorial....

James Mercer Moss, M.D.



WE WELCOME the new President of The Medical Society of Virginia as he assumes office during these critical times for American medicine. As he takes his place among his worthy predecessors, it is well to review James M. Moss' achievements and activities.

Born in Bradley, Georgia, the son of the late Dr. Fred A. Moss and Rosa M. Moss, he received his medical degree from the University of Virginia in 1941. After serving his internship at the University of Virginia Hospital, he entered the United States Army Medical Corps and was discharged as a Major in 1946. He then completed his residency, first as a fellow in endocrinology at Duke University and then as a resident in medicine at the University of Virginia Hospital.

In 1949 Dr. Moss entered private practice in Alexandria and was also appointed to the faculty of Georgetown University School of Medicine. Since then he has been recognized as one of the outstanding authorities in Diabetes.

A survey of the new Presidents' past and present appointments in both the medical scientific and the medical organizational fields presents an overwhelming picture of achievement and service. He has served his local

medical and lay communities in many assignments; he has been a devoted teacher and physician who had gained national recognition for his accomplishments.

It can truly be said of James M. Moss that he is the all around physician. We wish him well in the days ahead and pledge him our support.

W.L.W.

The Press and the Doctor's Image

THE UNBRIDLED POWER of the press had given many good Americans concern long before Vice-President Agnew's recent barbs. The American press has much on the credit side: its prompt accurate accounts of the news and its long history of exposing insincerity or wrong-doing in high places are outstanding. When it attempts to act as our social conscience and to remake society in the image it thinks proper, then it gets into trouble. The private citizen can do little in his puny efforts to answer the press. His "Letter to the Editor" and his news-making efforts might go ignored, evidence of the unsuitability of certain editors to bear the awesome responsibility of monopoly. Many editors, it must be admitted, do try to publish opposite views in their Letters to the Editor section, and accept all except the scurrilous, obscene and picayune. Not so with the *Washington Post*.

Some months ago the *Washington Post* ran a diatribe against the medical profession written by Nicholas Von Hoffman, who had served a nine year apprenticeship under Saul Alinsky, organizer of the poor. In a rejected Letter to the Editor, I challenged Von Hoffman to clarify his statement: "Thanks to the restrictive educational policies of the profession, there aren't enough doctors." If he could prove the implication that the medical profession restricts the number of doctors for its financial gain, I promised $100 to the charity of his choice; if he couldn't he must give $100 to the charity of my choice, his own paper being the judge of his proof. Not only was my challenge unaccepted, but a personal letter to me from the editorial department acknowledged that Von Hoffman was *allowed* to avoid this challenge. I can understand that a newspaper could not possibly be held responsible for the truth of every statement of its feature writers, but in a matter so important as medical care, one would expect that the paper would insist on responsible journalism.

Later, the *Post* carried a series by Robert C. Maynard on public housing dealing with the Pruitt-Igoe development in St. Louis. I was impressed with the "acres of broken windows, garbage scattered in the stair-wells, and odors of human excreta assailing the visitor." My Letter to the Editor, complaining that none of these things falls within the purview of normal maintenance, and containing the statement, anathema to fuzzy-minded liberals, that people are more important in making slums than buildings, naturally was rejected.

With what glee did the press pounce upon the medical profession's alleged financial abuses of Medicare and Medicaid: For just one example, the implication was clear that the $1.6 million of Medicare funds for the massive Cook County Hospital made its way into the hands of the attending physicians' pockets after the resident staff did the work. I have seen nothing of their exculpation in the general press except in that stalwart of honest reporting, the *United States News and World Report.*

Nor have I seen in the general press that of 2,026 physicians investigated for Medicare fraud since the program started, only seven cases have been referred to the Justice Department for criminal prosecution, an infinitesimally small percentage.

What to do about the press? A free press is essential to our American system. A biased press cannot be free for long. Some people are beginning to consider that just as the air waves are the common property of us all, so are the paths of dissemination of the printed news words, and these too should be licensed. Dr. W. Walter Menninger, a psychiatrist and a member of the National Commission on the Causes and Prevention of Violence, has suggested government licensing of reporters (for better or for worse). He, as well as I, thinks that the news media should make available to the public a means of gaining redress for what the public considers irresponsible journalism. A good technique for this redress is unfettered Letters to the Editor. A whole page of a metropolitan paper could be donated by law to the public in return for the paper's privilege of being so potent a force in molding public opinion. A randomly selected committee, such as a jury, could be utilized when the volume of letters became excessive.

Irresponsible reporting in medical matters constitutes a special case. The American Medical Association offices might function as a clearing house for receiving news items in need of answering culled by the physicians in the field; at appropriate intervals, releases could be sent to all members for dissemination to their patients. No one is going to look after our image but ourselves.

Christian V. Cimmino, M.D.

News ....

Calendar of Events

Southern Medical Association—Annual Meeting—Dallas, Texas—November 16-19, 1970.

Thursday Afternoon Lectures—Sponsored by University of Virginia School of Medicine—Charlottesville—Through November 19, 1970.

American Medical Association—Clinical Session—Boston—November 29-December 2, 1970.

Asthma Conference—Sponsored by Continuing Education Program of the University of Virginia School of Medicine—Charlottesville—December 11, 1970.

National Conference on Cancer of the Colon and Rectum—Hotel del Coronado, San Diego, California—January 7-9, 1971.

Annual Medical Seminar—Sponsored by Continuing Education Program of University of Virginia School of Medicine—The Homestead—Hot Springs—February 17, 18, 19, 1971.

American College of Physicians, Virginia Section—The Homestead—Hot Springs—February 20, 1971.

Alton D. Brashear Post Graduate Course in Head and Neck Anatomy—Department of Continuing Education—Medical College of Virginia—Richmond—February 25-26, 1971.

Thursday Afternoon Lectures—Spring Series—Sponsored by University of Virginia School of Medicine—Charlottesville—March 4-April 29, 1971.

Student Cancer Day—Sponsored by Continuing Education Program of University of Virginia School of Medicine—Charlottesville—March 5, 1971.

Virginia Academy of General Practice—Annual Assembly—The Homestead—Hot Springs—March 10-14, 1971.

Post Graduate Course in Radiology—Department of Continuing Education—Medical College of Virginia—Williamsburg—March 14-18, 1971.

Roanoke Memorial Hospital Post Graduate Program—Roanoke—March 18-19, 1971.

Emily Gardner Lectureship (Pediatrics)—Department of Continuing Education—Medical College of Virginia—Richmond—March 19, 1971.

* * * * * * *

The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following doctors were accepted into The Medical Society of Virginia during the month of September:

William Cardwell Amos, Jr., M.D., Springfield
Charles Robert Barton, Jr., M.D., Scottsville
Wilbur Frank Burger, M.D., Lynchburg
Lucia Soondong (Lee) Chun, M.D., Richmond
Jose Fernando Corsino, M.D., Danville
John Eugene Gibson, M.D., Alexandria
William H. Grey, M.D., Staunton
Robert Edwin Howard, Jr., M.D., Hampton
Andrew Anthony Mayer, M.D., Norfolk
William James Mullins, Jr., M.D., Newport News
Frank H. Reuling, Jr., M.D., Winchester
David Blair Rice, M.D., Fredericksburg
Felix Santos Ruivivar, M.D., Claudville
Stephen E. Slatkin, M.D., Norfolk
Delmar Franklin Weaver, M.D., Culpeper

Family Doctor Group Takes New Name.

The American Academy of General Practice now will become known as the American Academy of Family Physicians. The action was taken by their Congress of Delegates at the recent meeting in San Francisco.

Dr. William E. Lotterhos, Jackson, Miss., was installed as president of the Academy and Dr. J. Jerome Wildgen, Kalispell, Mont., was named president-elect. Dr. Thomas L. Lucas, Alexandria, was named as a director for a three-year term.

Dr. Felix Santos Ruivivar

Has opened his practice at the Red Bank Clinic at Claudville. He is a native of the Philippines and received his medical degree from the University of the Philippines.

Dr. Randolph H. Hoge,

Richmond, was guest speaker at the annual meeting of the Virginia Beach Unit of the American Cancer Society on September 24th. He spoke on "Of Cancer Peculiar to Women".

Richmond Area Hospital Association.

Dr. Thomas N. P. Johns, Johnston-Willis Hospital, has been named president of the newly organized Richmond Area Hospital Association. Dr. Richard A. Michaux, Stuart Circle Hospital, is vice-president and Dr. James A. Selph, Jr., Chippenham Hospital (under construction), secretary-treasurer.

The association was formed to promote improved hospital services and serve as an adviser to the Capital Area Regional Health Planning Council. It will provide a forum for discussion of hospital affairs in the civic interest and thereby improve the quality of hospital services in the Richmond area.

Fourteen of the Richmond area hospitals are members of the association.

The Virginia Board of Medical Examiners

At its meeting on November 29th will make available time and space for representatives of hospitals or communities who are interested in recruiting doctors for their particular areas. This meeting will be held in the John Marshall Hotel, Richmond. The secretary would like to have the name of the representative and the hospital or community interested in securing such space. Please submit this information to the Board office, 509 Professional Building, Portsmouth, Virginia 23704, prior to November 13, 1970.

The Alton Brashear Postgraduate Course

In Head and Neck Anatomy will be held at the Medical College of Virginia, February 22-25. Further information may be obtained from Dr. Hugo R. Seibel, Depart-

ment of Anatomy, Medical College of Virginia, Richmond, Virginia 23219.

Emergency Department Physicians Form Group.

Four state chapters of emergency department physicians were formed at a meeting held at Fairfax in July. Dr. Reinald Leidelmeyer, director of The Fairfax Hospital Emergency Department, was chairman of this meeting. Approximately 30 doctors from Maryland, Delaware, Virginia and the District of Columbia attended. The states hope to establish individual chapters but will meet on a regional basis for workshop and scientific study purposes. Dr. Leidelmeyer was selected as regional coordinator of the four-state group.

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Obituary . . . .

Dr. Allen Barker,

Roanoke, died September 30, after a short illness following a heart attack. He was a native of Pittsylvania County and sixty-seven years of age. Dr. Barker received his medical degree from the University of Virginia in 1929 and began the practice of Radiology in Petersburg in 1933. He located in Roanoke in 1939 where he was chief of the Department of Radiology at the Lewis-Gale Hospital. Dr. Barker served during World War II as chief radiologist of the 315th General Hospital in the Philippines. He was a member of the Board of Directors of the Lewis-Gale Hospital and a staff member of the Community Hospital of Roanoke Valley.

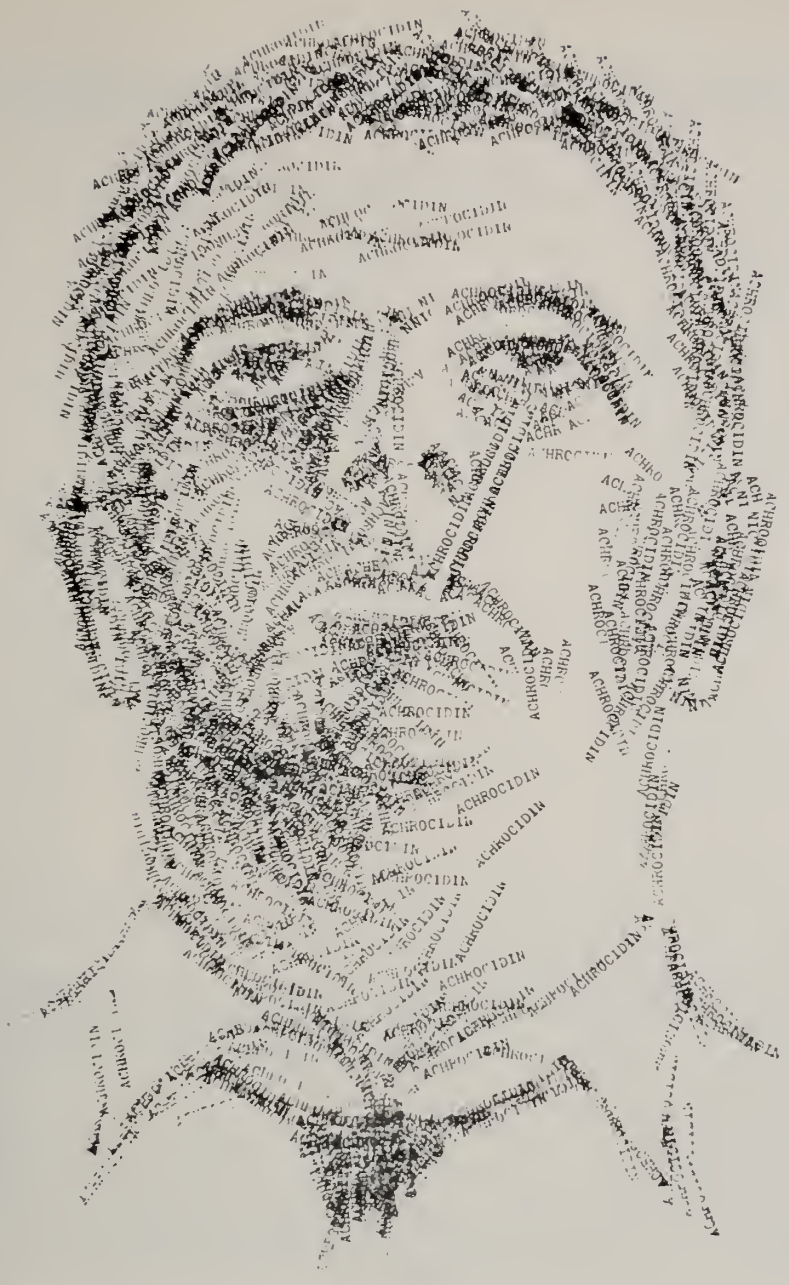
Dr. Barker was president of The Medical Society of Virginia in 1960 and president of the Roanoke Academy of Medicine in 1954. He served as a member of the House of Delegates of the American Medical Association from 1957 to 1959. He had been an active member of The Medical Society of Virginia for thirty-six years.

His wife, a daughter and a son survive him.

Dr. Joseph Dingus Culbertson,

Coeburn, died September 9, at the age of sixty-three. He received his medical degree from Vanderbilt University in 1934. Dr. Culbertson had been a member of The Medical Society of Virginia since 1939.

His wife and two brothers survive him.



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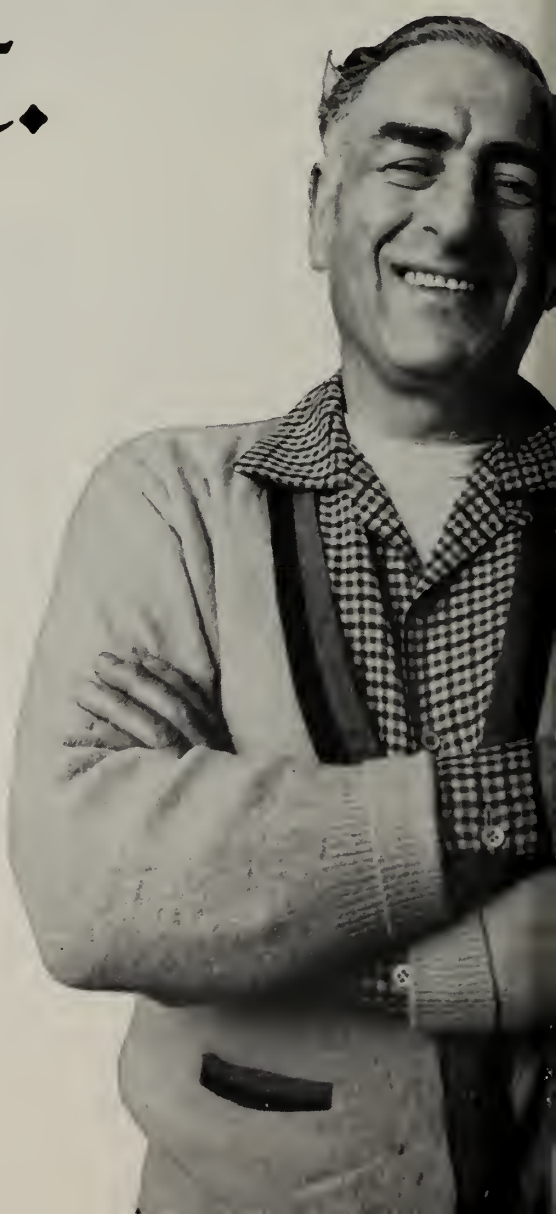


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VIRGINIA MEDICAL MONTHLY

THE FRANCIS A. COUNTWAY
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BOSTON
29 DEC 1970

DECEMBER 1970

OFFICIAL PUBLICATION OF THE
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References:
(1) Siver, R. H.: CMD, 21:109, September 1954. (2) Frykman, H. H.: Minn. Med., 38:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., 51:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., 15:15-16, October 1965. (5) Weekes, D. J.: NY State Jour. Med., 58:2672-2673, August 1958. (6) Ellis, S. and Spratt, J. S.: JOUR. AMER. GER. SOC., 18:410-415, May 1970.

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stinal monilial overgrowth has appeared this week

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Effectiveness: Because its antibacterial component is ECLOMYCIN® Demethylchlortetracycline, DECLOSTATIN should equally or more effective therapeutically than other tetracyclines in infections caused by tetracycline-sensitive organisms. The tifungal component, nystatin, protects against superinfection by ntibiotic-resistant fungal overgrowth (particularly monilia) in the intestinal tract.

ntraindication: History of hypersensitivity to demethylchlortetracycline or nystatin.

Varning: In renal impairment, usual doses may lead to excessive cumulation and liver toxicity. Under such conditions, lower than ual doses are indicated and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to atural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

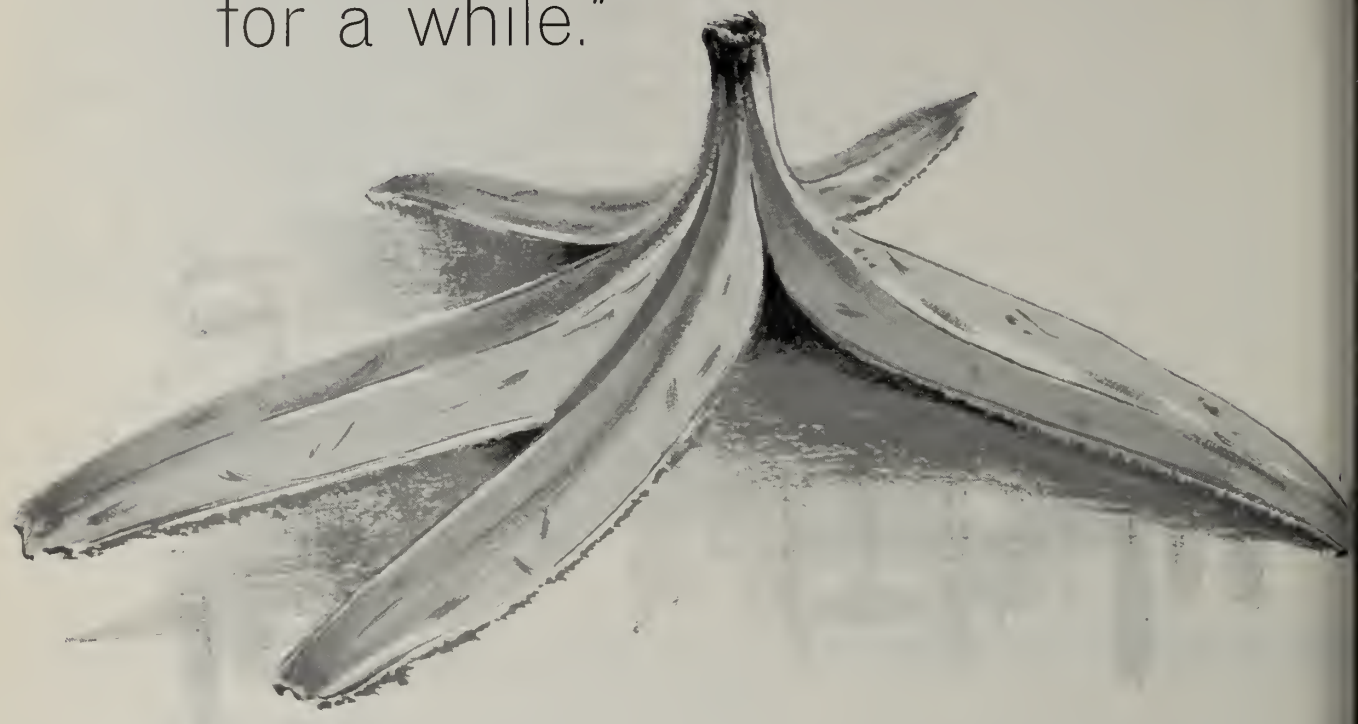
ecautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose-related. Transient, reversible, nephrogenic diabetes insipidus with excessive thirst and polyuria (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: One tablet b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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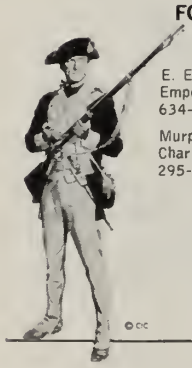
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PUBLISHED TO REPLACE A PREVIOUS ADVERTISEMENT WHICH THE FOOD AND DRUG ADMINISTRATION CONSIDERED MISLEADING

The Food and Drug Administration has requested that we bring to your attention a recent promotional campaign for Garamycin Injectable (gentamicin sulfate) which featured a nationwide *in-vitro* hospital survey involving a comparison of sensitivity patterns of Garamycin Injectable and seven other antibiotics.

The FDA considers the advertising misleading in several respects such as:

The *in-vitro* chart contained in the ads, which compared Garamycin Injectable with seven other antibiotics, implied that Garamycin Injectable is clinically more effective than the seven other compared antibiotics. THE FACTS ARE (1) THAT DIRECT EXTRAPOLATION OF NONCLINICAL FINDINGS TO CLINICAL EFFECTIVENESS IS UNWARRANTED, AND (2) THAT THE ADVERTISED *IN-VITRO* COMPARISONS DO NOT CONSTITUTE A VALID BASIS FOR SUGGESTING THAT GARAMYCIN INJECTABLE HAS GREATER CLINICAL EFFECTIVENESS THAN THE COMPARED ANTIBIOTICS.

The *in-vitro* chart and information contained under the ad heading, "Indications" presented *in-vitro* data results in such a way as to imply that the drug is indicated for Gram-positive bacteria, such as *Staphylococcus aureus*. GARAMYCIN INJECTABLE IS NOT APPROVED FOR INFECTIONS DUE TO ANY GRAM-POSITIVE ORGANISMS.

We emphasize that Garamycin Injectable is approved for use only in infections due to susceptible strains of gram-negative bacteria, including Pseudomonas aeruginosa, and species of indole-positive and indole-negative Proteus, Escherichia coli, and Klebsiella-Aerobacter.

Injectable Garamycin®

brand of gentamicin sulfate injection

Schering

Each cc. contains gentamicin sulfate equivalent to 40 mg. gentamicin

BRIEF SUMMARY

INDICATIONS GARAMYCIN Injectable is clinically effective in infections due to susceptible strains of gram-negative bacteria, including Pseudomonas aeruginosa, and species of indole-positive and indole-negative Proteus, Escherichia coli, and Klebsiella-Aerobacter. Bacteriologic studies should be conducted to identify the causative organism and to determine its sensitivity to gentamicin sulfate. Sensitivity discs of the drug are available for this purpose. If the susceptibility tests indicate that the causative organism is resistant to gentamicin sulfate, other appropriate antibiotic therapy should be instituted.

This drug should be limited to the treatment of serious infections caused by gram-negative bacteria, particularly Pseudomonas aeruginosa, Proteus and other susceptible organisms, with due regard for relative antibiotic toxicity. Therefore, the drug should be considered for use against gram-negative: 1. Bacteremia; 2. Infected surgical wounds; 3. Severe soft tissue infections, including burns complicated by sepsis; 4. Respiratory tract infections; and 5. Selected cases of urinary tract infection.

CONTRAINDICATIONS GARAMYCIN Injectable is contraindicated in individuals with a history of hypersensitivity or toxic reactions to gentamicin.

WARNINGS **Patients receiving treatment with GARAMYCIN should be under close clinical observation because of the toxicity associated with the use of this drug. Ototoxicity, vestibular and auditory, can occur in patients, primarily those with pre-existing renal damage, treated with GARAMYCIN Injectable, usually for longer periods or with higher doses than recommended.**

GARAMYCIN Injectable is potentially nephrotoxic, and this should be kept in mind when it is used in patients with pre-existing renal impairment. Kidney function diminished by infection of the upper urinary tract may, however, improve during effective treatment with GARAMYCIN Injectable.

Concurrent administration of potentially ototoxic drugs such as streptomycin and kanamycin or of potentially nephrotoxic drugs such as polymyxin, colistin, and kanamycin with gentamicin sulfate has not been shown to afford any clinical advantages and, moreover may result in additive toxicity. Monitoring of vestibular, cochlear, and renal function will provide guidance for therapy in such cases.

PRECAUTIONS In patients with impaired renal function in whom serious infection develops, serum concentrations of the drug may rise, with consequently increased risk of ototoxicity. In these patients or in those in whom recommended dosage or duration of therapy must be exceeded as a life-saving measure, routine studies of kidney function should be performed when possible. These may be supplemented by evaluation of the vestibular and auditory function and measurement of serum concentration of the drug when feasible. Serum concentration of gentamicin should be maintained below the range of 10-12 mcg./ml. to reduce risk of ototoxicity.

Ordinarily, treatment should not be given for more than 7 to 10 days or be repeated unless required for serious infection not responsive to other agents.

As with other antibiotics, treatment with GARAMYCIN Injectable may occasionally result in overgrowth of nonsensitive organisms. If superinfection occurs, appropriate therapy is indicated.

Safety for use in pregnancy or the potential for fetal ototoxicity or nephrotoxicity have not been established. Studies in pregnant animals have not revealed teratogenic or ototoxic effects in the fetus. GARAMYCIN Injectable should not be used in pregnant patients or in women of childbearing age unless its use is deemed advisable by the physician.

ADVERSE REACTIONS The overall incidence of ototoxicity considered related to treatment with GARAMYCIN Injectable was 2.8 per cent (16 of 565 patients). Contributory factors (two or more factors were relevant to most patients) were as follows: 10 had azotemia, 10 received a total of 1 gram or more of the drug, 7 had recently received other potentially ototoxic antibiotics (streptomycin or kanamycin), and 5 were over 60 years of age. Six also had decreased high-tone hearing acuity, which returned to or toward normal in the 4 patients retested.

Analysis of BUN data indicated that 4 (2%) of 172 patients showed increases in BUN that were probably related to treatment with GARAMYCIN Injectable. Of 20 increases probably or possibly related to treatment, 7 were reversible, 9 occurred in terminal patients, and 4 had no follow-up.

Other adverse reactions associated with treatment were one instance each of urticaria, decreased hematocrit, and reversible depression of granulocytes with normal bone marrow. Other rarely reported and possibly treatment-related adverse reactions were anemia, increased reticulocyte count, rash, purpura, drug fever, hypotension, convulsions, twitching, salivation, nausea, vomiting, increased transaminase activity (SGOT or SGPT), increased serum bilirubin, decreased serum calcium, and joint pain.

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Each fluid ounce contains: Kaolin, 6 g.; Pectin, 142.8 mg.; Hyoscyamine sulfate, 0.1037 mg.; Atropine sulfate, 0.0194 mg.; Hyoscine hydrobromide, 0.0065 mg.; Sodium benzoate (preservative), 60 mg.; Alcohol, 3.8%.

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Alcohol, 3.5%

For unproductive allergic coughs

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Each 5 cc. contains:

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Pheniramine maleate	7.5 mg.
Codeine phosphate	10.0 mg.

(warning: may be habit forming)
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Non-narcotic for 6-8 hr. cough control

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Each 5 cc. contains:

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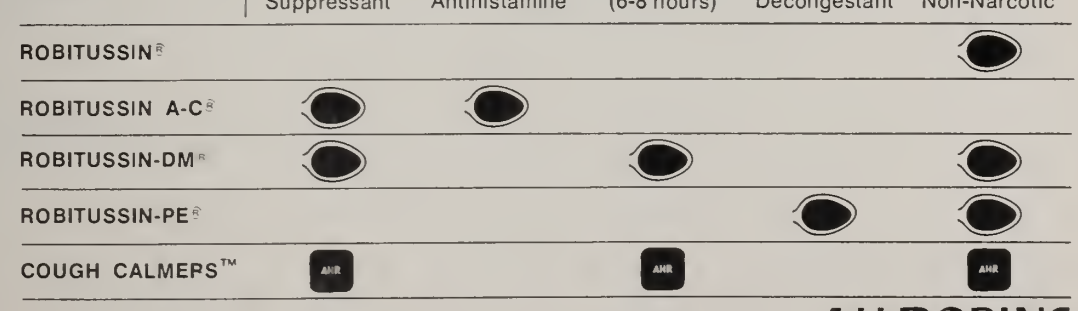
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These benefits have led thousands of physicians, year after year, to depend on the relaxing sedative effect of BUTISOL Sodium for a wide range of needs: to help the usually well-adjusted patient cope with temporary stress... or to relieve the anxiety associated with hypertension, coronary disorders, premenstrual tension, surgical procedures, functional GI disorders, and the strains of aging.

Another advantage: the very fact that BUTISOL Sodium has been around so long assures you there is little likelihood of unexpected reactions. Its clinical capabilities are thoroughly established... its side effects completely known.

Which is one more reason why BUTISOL Sodium is the Rx that says "relax." To the doctor, too.

*Based on surveys of average daily prescription costs.

Contraindications: Porphyria or sensitivity to barbiturates. *Precautions:* Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression. *Adverse Reactions:* Drowsiness at daytime sedative dose levels, skin rashes, "hangover" and systemic disturbances are seldom seen. *Warning:* May be habit forming. *Usual Adult Dosage:* For daytime sedation, 15 mg. to 30 mg. t.i.d. or q.i.d. For hypnosis, 50 mg. to 100 mg. *Available as:* Tablets, 15 mg., 30 mg., 50 mg., 100 mg.; Elixir, 30 mg. per 5 cc. (alcohol 7%). BUTICAPS® [Capsules BUTISOL Sodium (sodium butabarbital)] 15 mg., 30 mg., 50 mg., 100 mg.

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MEDICAL MONTHLY

December, 1970

Vol. 97, No. 12
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Guest Editorial . . .

Abortion Without Medical Indication

THE PROBLEM OF ABORTION has as many facets as any that the medical profession has had to deal with in a number of years. It has been with us always in one form or another, but until recent years it has been relatively simple with a sharp line drawn between what is proper and what is not.

However, in the past few years the changing moral, social and legal code has wrought vast changes in the public attitude toward abortion.

The important point to me, and the point which bears emphasis it has not previously received, is that these changes have not been in abortion as a medical procedure at all. Medically or surgically it is the same old D. & C. and remains relatively simple from the technical standpoint if carried out in the early months of pregnancy.

The changes are really outside of the realm of medical practice. They are legal, moral and social and they are tremendous, indeed. In consequence we in organized medicine have been going through mental and oratorical convulsions and gyrations most unbecoming at times to the dignity of the profession. These have been singularly unproductive as far as bringing forth a consistent policy or platform on which we can stand firmly, proudly and happily.

The last satisfactory policy on abortion set forth by the AMA was the 1967 resolution adopted by the House of Delegates. This was modified and adopted by The Medical Society of Virginia in 1967. A similar policy was enacted into law by the Virginia Assembly at its recent session. This is good policy and law because it concerns itself with therapeutic abortion for sound medical indications.

Trouble arises and the whole thing comes apart at the seams, when we take a policy which is sound, when applied to therapeutic abortion, and try to modify it so that it can be used for abortion without any medical indication at all. The simple fact is that these two procedures can never be measured on the same yardstick. One is sound medical practice and the other is not.

Abortion on demand or on request is something quite different:

1—You may call it a social service or a solution to a social problem if you are of the liberal persuasion.

2—You may see it as an expression of the rights of youth to a free sex life without being liable for the consequences.

3—It may represent the right of a woman to bear or not to bear a child as she may choose.

4—You may see it as a necessary expedient to control the population explosion with its resulting pollution of the environment and projected world famine.

5—Or you may see it as simple murder and the first cousin to infanticide which has been practiced in some primitive societies for some of the very same reasons.

Any of these things it *May Be*. But there is one thing *It Is Not*. *It Is Not* the practice of medicine. It is the antithesis of the practice of medicine. It treats no one's illness, it saves no one's life. It touches medicine only tangentially because the technology and scientific knowledge of medicine are necessary to carry out the procedure and insure the safety of the pregnant woman.

So let us stay with our policy on therapeutic abortion as set forth in 1967.

But let us also be realistic. The public is expressing strong demand for more liberal abortion laws and it is getting them. Abortions have been legalized without significant limitations in several states, and more are sure to follow. It is quite possible that the Supreme Court in its current session may rule as unconstitutional most of the present state laws on abortion. So let us say to the people and to our legislators, "We will accept and obey your laws; but if you decide to legalize abortion without medical indication, please establish clinics, staffed by government physicians, to carry out the procedure. There will be ample demand for their services to keep full time government physicians busy doing abortions. The general hospitals are needed to take care of the sick."

In most of those states which have legalized abortion without medical indication the medical societies have endorsed it, and it is being woven into the fabric of medical practice. In my judgment they will regret this. This procedure lends itself to commercial promotion as witnessed by the many letters from the State of New York soliciting referrals of patients for this service. There will be men who specialize in this alone, and this specialty will be quite lucrative on a private basis. Under the present arrangement these men will be active in the medical society and some of them may hold high office.

Those who do this work as a part of an active obstetric and gynecology practice will enjoy an even easier access to the fold. This practice can do us no good; it can only corrupt us.

It will be to the eternal credit of the medical profession if we can say to the public, "Pass these laws if you must. We will obey the law and we will cooperate in the establishment of clinics so that the procedures can be done properly and safely. But the doctors do not need or want this kind of money. It is not a part of the practice of medicine."

W. S. Hotchkiss, M.D.

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Presidential Address

WILLIAM GROSSMANN, M.D.
Franklin, Virginia

I CONSIDER IT A SINGULAR HONOR to have served as president of this society during the 150th year of its history and it is indeed appropriate that we celebrate this anniversary at our annual meeting in Richmond, not only because much of the early history of our organization centered here but also because the Richmond Academy of Medicine is observing its 150th year of service as well. And so, as President of The Medical Society of Virginia, I extend best wishes and congratulations to one of our outstanding component societies.

A century and a half ago and continuing for the first hundred years, medicine in Virginia was more of an art than a science. Doctors were comforting, reassuring and unhurried. Small wonder—for reassurance and comfort were often all they could offer. Unhurried, for patients came to them only when they were seriously ill.

The last fifty years have seen the development of the scientific revolution in medicine. This period in our history has produced more advancement and progress in our knowledge of disease, both preventive and curative, than the preceding 500 years. And though medicine even yet is by no means an exact science, and hopefully never will be, it now more closely approaches this characteristic. Today, our technical knowledge, skills and sophistication have established American medicine as the finest the world has ever known.

Unfortunately, however, during this period of scientific progress, too little concern has been shown for an equally important part of health and medical care—namely the system of American medicine, or the delivery of our services to all who may need them.

We have achieved excellence—we must now be as concerned about equity. This excellence of medical care must be shared by the poor as well as the affluent, the young as well as the old, by the black people as well as whites, and by the rural as well as urban dwellers. To say that health care is the right of all citizens is an aspiration and not a reality today.

Our system of high quality but costly and in many areas poorly distributed medical care is in trouble. That we are in a serious, if not a critical situation, is generally recognized in Virginia as well as throughout the United States. Because of improved public education, dramatic advances in medical knowledge and new techniques, because of the population explosion together with the increased ability of more people to pay for care, either through their own resources, prepaid insurance, fringe benefits, or governmental programs such as Medicare and Medicaid, there has been a tremendously increased demand for medical services. That we are unable to meet this demand at this time is equally obvious.

The reasons are many but are primarily concerned with three major deficiencies:

(1) A shortage in medical manpower (physicians, nurses and other professional and semi-professional personnel) and their poor distribution in some areas.
(2) Lack of adequate medical facilities and their poor location.
(3) An inadequate system to deal effectively and efficiently with a problem of this magnitude.

We will continue to be unable to satisfy

Presidential Address before The Medical Society of Virginia, Richmond, October 11-14, 1970.

this medical appetite unless we not only solve these problems but are willing to change or modify some of our present ideas as well.

One of the results of the disparity between the capabilities of medical care and its availability and cost has been, as an editorial in the American Medical News described it, "open season on physicians and organized medicine." Television, newspapers, magazines and speeches by many self appointed experts on medical care have enjoyed a "field day" at our expense. The CBS television specials which repeated the general theme that *whatever the problem, pin the blame on the doctors,* was a shining example.

We resent being singled out as the major cause of the financial disasters of Medicare and Medicaid. We dislike being made the whipping boy, especially since it was organized medicine that was first and almost alone in pointing out that the costs of these programs would be far in excess of that predicted by their proponents. The vast majority of physicians in Virginia are making sincere and determined efforts to make these programs effective. They are not overcharging; they are not abusing the plans, and for these conscientious efforts they have earned the role of scape goat. Continued harassment can only force an increasing number of physicians to refuse to participate, which would then result in the establishment of two levels of medical care, private and publicly funded—a far cry from the single high quality care envisioned by Congress. Attacks on the integrity and dedication of doctors, whether in the press, on television or in the halls of Congress will undermine public confidence and make impossible any chance of success for any medical program.

We accept the fact that problems of serious magnitude face us now, but we do not accept the implications of some and the direct accusations of others that medicine is unmindful of the problems, unwilling to do what is necessary to correct them, or that we are doing nothing at the present time. More particularly do we reject the accusation that all of the ills and evils of present health care is of our making or due entirely to faults of the present system.

We recognize that the increasing cost of care has created a demand for a universal health insurance program and that something must be done to improve delivery of care to people in the ghettoes and in rural areas. And through the work of thousands of physicians, organized medicine is earnestly trying to solve these problems. Thus far for these efforts our rewards have been criticism and scorn by many, including some of those whom we are particularly trying to help.

Despite this atmosphere of disparagement —which in some instances we feel is deliberate—medicine in Virginia will continue to look with hope and confidence toward the next 150 years with even greater expectations than the era we celebrate today.

What then should be the role of The Medical Society of Virginia in today's problems of health and medical care? That we should be *concerned* will, I believe, find few dissenters. *Most* would agree but *others* would oppose that we should become *involved*. Some, and I among them, would go a great deal further and propose that we should assume an *active leadership* in shaping the future of medicine in the 70's and for years to come. For unless we do assume this role, we may be sure that there are many waiting in the wings eager to play our part. Labor leaders, economists, congressmen and others who are more concerned with publicity and politics than professional performance may be recognized among these anxious actors. I would like to think, however, that rather than because of this threat, though very real it is, we would undertake this obligation because it is the right, the proper and the desirable thing to do. Admittedly a new role for present-day medicine, it is, however, our proper role.

We serve our patients, we serve society, and we serve our profession when we accept this challenge. Our goal should be to improve our present system and to devise new ways of making quality health care available and acceptable to every citizen in the Commonwealth of Virginia regardless of their social class, ethnic origin, ability to pay, or the source of payment.

To accomplish this aim, it will be necessary that we make The Medical Society of Virginia an effective voice and a forceful agency for all of medicine in the Commonwealth. Traditionally, the Society has predominantly represented and reflected the viewpoint of the private practitioner. No longer is this sufficient nor desirable. Physicians engaged in research, teaching, and public health and governmental services should be urged to join. And to be truly meaningful, a better representation of black physicians and the eligibility of the medical students at our two medical schools is essential.

Equally important to the composition of our own society is our membership in the American Medical Association. Only through greater representation and participation in this body will Virginia's voice be heard, for despite minor dissatisfaction, the AMA is the official body of organized medicine in the United States, and failure to support it, and fragmentation into other groups can lead only to loss of effectiveness and weaken us as a profession.

To strengthen our associations and cooperation with other professional groups will not only enhance our efforts in our own field but will help to remove the stigma of selfishness placed upon us in many of our endeavors. I would particularly commend to you the Virginia Association of Professions, whose present President is Dr. Robert O. Hudgens, and urge that you seek membership in that body.

That health and medical care today is a multi-disciplinary task is sufficient reason to improve our liaison with allied health professions. That nurses, dentists, pharmacists, hospitals, nursing homes, osteopaths, podiatrists, optometrists and others including even various individuals in H.E.W. can be of material help to us as leaders of the health care team is too frequently overlooked.

One of the most important needs facing the Society today is an honest and complete appraisal of our own organization, its structure, aims and functions. Dr. Egeburgh, Assistant Secretary for Health of H.E.W., has stated that if medicine is to remain a profession it is very important that we carry out our own self evaluation, and Dr. Dorman, immediate past president of the A.M.A., has added that we must be willing to alter certain of our cherished traditions and must be willing to accept and support totally new ideas whether we devise them or they are devised by somebody else. It is no family secret that we do have our faults. We must stop telling each other how good we are. Let us be the first to recognize our deficiencies and do what is necessary to correct them. Then our image will be more pleasing not just to the public but to ourselves as well. I have been greatly encouraged by the tremendous job already accomplished by the committee composed of three past presidents, Drs. Bates, Birdsong, and Palmer and would strongly urge the continuation of this committee which is studying the aims and organization of The Medical Society of Virginia.

My final proposal is that this Society inaugurate an effective program of public relations as soon as possible. Public opinion has become one of the world's most dominant forces. Our reputation is dependent not on what we think we are, or even what we know we are, but what the public thinks we are. As individuals, we have the respect and admiration of most of our patients. As a group we are held in very low regard by many persons and organizations. That we have a "bad press" has been long recognized. It is imperative that we improve and in some instances change our public image.

Many plans and proposals have been advanced as solutions to the problems of the delivery and financing of health care—none of which seem to be the one best suited to all areas and circumstances. We do not pretend to have the answer in Virginia and it seems quite likely that a *single* system is not the answer to the problem of providing health care services. It would seem logical that as much of the private practice of medicine, in as much of its present form as is compatible with the present needs of society and is in the best interest of our patients should be a major part of any future system.

We recognize that the effective provision of health services in the future and the planning and implementation of health care programs will call for multidisciplinary action as well as an extreme degree of cooperation among the health professions and consumers. In Virginia as perhaps in few other states this opportunity exists to a most unusual degree. For many years, the medical family in Virginia has been characterized by unusual harmony and respect among the various component members. Medicine must and will change, and we of necessity with it. In Virginia we have the talent and resources; we have the necessary climate for cooperative effort and I believe that we have the desire to contribute to the development of the best health care system in the history of medicine throughout the world.

The challenge is great. We have the ability to meet it. And I pray we do.

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Insurance Companies

Are now required to report to the Internal Revenue Service all payments to physicians. As a result, many carriers have altered their claim forms in such manner as to provide a space for the physician to insert his social security number or tax identification number—whichever is applicable.

Several carriers have suggested that the physician might wish to have a rubber stamp made containing his name, address and social security or tax identification number. Such a stamp would eliminate typing errors and also conserve the physician's valuable time.

Circumscribed "Giant-Cell" Glioblastoma

A. R. COPPOLA, M.D.
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This giant-cell glioblastoma, a variant of grade IV astrocytoma, was well circumscribed at operation and was easily removed. Malignant cells had invaded beyond the tumor, however, so that wide excision was required.

GLIOBLASTOMA MULTIFORME (Astrocytoma Grade IV) is a common glioma affecting the central nervous system and comprises approximately 46% of central nervous gliomas. Report of another such tumor would be of little merit except that the present case illustrates several points of interest. First, the tumor was entirely circumscribed at surgery and quite easily removable, much like a meningioma. Secondly, the tumor consisted on microscopic examination almost in toto of "giant cells" and corresponded to tumors variously classified in the literature as ganglio-glioneuroma, ganglioblastoma, spongioblastoma multiforme gangliodes, ganglioglioma, retothelial sarcoma, spongioneuroblastoma, malignant ganglioneuroma, and "Monstrocellular Sarcoma."[2] The present case demonstrates unequivocally that such a tumor is merely another variant of Grade IV astrocytoma. Third, removal of the circumscribed tumor is ineffectual even with cobalt therapy and wider excision is imperative with removal of cortex to include invasive neoplastic cells.

Case Report

Mrs. L. W. T., a 33 year old Negress, was admitted to the hospital on October 25, 1967, with history of approximately six weeks duration of severe headaches, recent vomiting, and poor vision. Vomiting would occur in the early morning. There was no history of similar headache, convulsion, or trauma. She had eight living children and in May, 1967, had undergone bilateral tubal ligation. Family history revealed that one aunt had diabetes mellitus. Physical examination revealed an alert, cooperative woman in no apparent acute distress. Positive neurologic findings consisted of bilateral papilledema with recent hemorrhages in both fundi and left bilateral temporal hemianopsia. Ophthalmologic consultation resulted in definite asymmetry on passing a target from left to right for opto-kinetic nystagmus indicating deep parietal involvement by tumor but not necessarily excluding occipital lobe involvement as well. Skull x-rays revealed no calcification of the pineal gland and were otherwise normal. Chest x-ray was normal. Laboratory studies were all normal. Electroencephalogram performed on October 26, 1967, showed an abnormal EEG with mild to moderate slowing predominantly in right frontal-right temporal area. Although not a typical slow wave focus, this finding was considered suggestive of a chronic lesion in this area. Radioactive brain scan performed on October 26, 1967, (600. mc. chlormerodrin) defined a 4.5 cm. right posterior parietal lesion, consistent with tumor.

Right percutaneous vertebral and carotid arteriography performed under general endotracheal anesthesia on October 27, 1967, revealed evident tumor stain, displacement of the posterior cerebral artery medially in its supratentorial portion, no evidence of posterior inferior cerebellar artery displacement, and delineation of a large posterior

deep parietal tumor on the right. (Fig. 1, 2 and 3). Since the patient exhibited rather



Fig. 1. Right vertebral arteriogram, lateral view demonstrating tumor stain and abnormal vascular pattern.



Fig. 2. Right vertebral arteriogram, AP view demonstrating tumor stain and medial displacement of the right posterior cerebral artery.

marked tachycardia under anesthesia, medical consultation was obtained prior to further surgery. No evidence of hyperthyroidism or other significant disease was found to



Fig. 3. Right carotid arteriogram showing shift of the anterior cerebral artery across the midline.

contraindicate the safety of surgery. On November 1, 1967, a right parietal osteoplastic craniotomy was performed. Urevert (1 unit) was administered prior to opening the dura; the brain was exceedingly tense, and widened, yellowish gyri were seen over the posterior parietal area. Tap of suspected tumor area (a transcortical incision) was made over the pathologically widened gyri with immediate escape of xanthochromic fluid suggesting a cyst. The incision was extended to allow inspection of the interior of the parietal lobe: 30-50 cc thick, yellow fluid then escaped from a cyst with decompression of the brain. After cyst evacuation, a solid, well encapsulated tumor (having much the gross appearance of a meningioma) was found. Vessels leading to and from the tumor were isolated without difficulty and only a few required clipping.

The tumor could then be delivered easily and completely without difficulty. Bleeding was very minimal at the base of the tumor bed. The postoperative course of the patient was entirely uneventful. There was no significant postoperative deficit neurologically, other than the previously present hemianopsia. Cobalt therapy was begun on November 13, 1967, without complication and without interference with wound healing. She received a total of 5000. r of Cobalt. Patient was discharged from the hospital on November 29, 1967. When seen at the office on January 5, 1968, headache and papilledema had disappeared and the previously mentioned hemianopsia was no longer apparent to gross testing. The patient seemed to get along extremely well for a period of approximately five months only to develop recurrence of headaches and papilledema. She was readmitted to the hospital on June 11, 1968, after a series of convulsions, in a comatose state and expired on June 12, 1968.

Surgical pathologic report: The specimen consists of a well circumscribed rubbery spherical mass measuring 3.5 cm. in greatest diameter and weighing 20 gms. On cut section, the surface has a glistening, smooth, fleshy appearance with focal areas of yellow necrosis and red hemorrhage.

Microscopic

This tissue consists predominately of a very pleomorphic, malignant neoplasm which is fairly well demarcated in most areas. Some portions of the edge of the mass appear to be covered with a fibrous capsule; however, this is incomplete in other areas. A few small pieces of central nervous system tissue are seen at the edge of the tumor and are infiltrated by groups as well as individual malignant cells. The neoplasm has a variegated pattern consisting of groups of rather

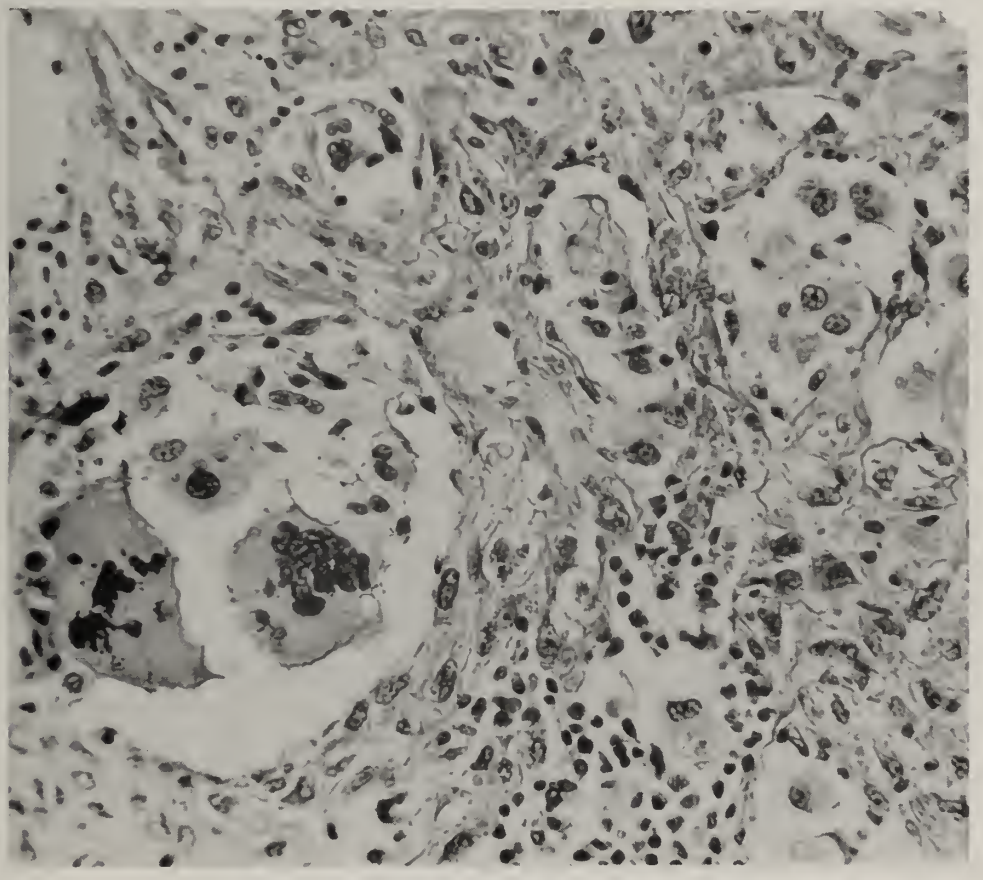


Fig. 4. Photomicrograph of tumor H and E stain X 200.

closely packed, giant cells with one or many nuclei and abundant eosinophilic cytoplasm with a homogenous to finely granular appearance. (Fig. 4) In other areas, large, pleomorphic spindle cells predominate. There is extensive necrosis, hemorrhage, and fibrosis throughout the tumor. Blood vessels are markedly sclerotic and thickened. Mitotic division figures are numerous and some are bizarre.

Diagnosis

Giant-celled glioblastoma of parietal lobe of brain.

Sections of the tumor were submitted to the Armed Forces Institute of Pathology who concurred in the diagnosis of "Giant-Cell Glioblastoma".

Autopsy findings: There is found involvement of the parietal and much of the occipital lobe on the right by a very anaplastic glioblastoma multiforme. The giant cell pattern is not as prominent in this tumor as in the original surgical specimen although numerous giant cells are noted beneath the biopsy site. The dura is adherent and there is invasion of dura by tumor. While the tumor on gross inspection appears to have a sharp border there is extensive infiltration of adjacent brain parenchyma by groups of tumor cells. Deep within the tumor the predominant cellular component is a small spindle shaped cell with hyperchromatic nucleus. There is palisading about blood vessels, and about areas of necrosis. Blood vessels with hyalinized walls are present. More superficially, particularly near the adherent dura, tumor giant cells are noted. These have hyperchromatic multiple nuclei and bizarre mitotic figures. These cells are not as prominent as those noted in the original surgical specimen. They extend into the overlying fibrotic dura. Cerebral parenchyma bordering the tumor shows marked edema with proliferation of astrocytes and microglial reaction.

Discussion

The case reported exemplifies the frequent association of cystic degeneration with glioblastoma multiforme and the apparent discreteness of the surgical specimen so that it can be literally "shelled out" at the time of operation. The pathologic appearance is rather characteristic with monster and multinucleate cells which tend to be plump or pyramidal, frequent mitotic figures, collagenous struma and other areas of smaller, multinucleated spindle-shaped neoplastic elements. Although the tumor appeared macroscopically circumscribed, microscopic examination of the surgical specimen revealed a small area of cortical infiltration by tumor. Zülch considers these tumors to be "monstrocellular sarcomas", attributing their origin to cerebral blood vessels. The presence of reticulin networks in these tumors is considered insufficient evidence to regard them as sarcoma, especially since areas of unequivocal glioblastoma, or transitional areas of gemistocytic astrocytoma have been noted in these "giant-cell glioblastomas". Most authors consider "giant-cell" glioblastoma, therefore, to be a sub-type of glioblastoma multiforme.[3,4,5] Removal of the circumscribed tumor in this patient followed by cobalt irradiation was obviously ineffectual and, as recommended by Jelsma and Bucy, a more radical removal of surrounding cortex containing infiltrative neoplastic cells should be done to prolong longevity. As previously mentioned, and as noted in the autopsy report in this case, leptomeninges may not infrequently be involved by tumor and should be excised at time of surgery. Relative ease of removal of this tumor is deceptive and longevity of survival time of the patient compromised if more radical surgery is not accomplished. Despite many controversial opinions on the management of glioblastoma multiforme in the literature,[7,8,9] the author agrees with more radical extirpation of neoplasm as advocated by Jelsma and Bucy.[10]

Summary

A case of circumscribed "giant-cell" glio-

blastoma is reported with clinical, operative, and autopsy findings. Despite circumscription of the tumor, more radical extirpative surgery is recommended for this type of tumor.

The author wishes to express his appreciation to Mr. Larry Gaskins, Department of Medical Illustration, Kecoughtan Veterans' Hospital, for the excellent reproductions submitted with this article.

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Monthly Report of Bureau of Communicable Disease Control

	Oct. 1970	Oct. 1969	Jan.-Oct. 1970	Jan.-Oct. 1969
Brucellosis	3	11	26	52
Diphtheria	—	—	1	—
Hepatitis	104	36	1,186	376
Meningitis (Aseptic)	63	15	193	29
Meningococcal Infections	—	2	41	57
Poliomyelitis	—	—	—	—
Rocky Mt. Spotted Fever	3	6	58	81
Rubella	6	19	720	1,652
Rubeola	29	5	2,014	681
Tularemia	1	—	6	4
Typhoid Fever	4	—	8	1
Rabies in Animals	13	11	201	338
Venereal Diseases:				
Gonorrhea	1,445	1,132	12,190	10,436
Syphilis	151	98	1,222	1,146
Other	1	1	24	39

An Acute Elevation of Serum Inorganic Phosphate in Cardio-Vascular Collapse

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Elevated inorganic phosphate levels were found in this patient just after onset of a shock-like state. An elevated blood lactate may have caused this change and it is suggested that serum inorganic phosphate levels may be utilized as an indicator of lactic acidosis.

THE SHOCK SYNDROME requires no clinical description, but a great deal of attention has recently been focused on the biochemical and metabolic abnormalities which accompany it.

In this instance a "shocked" individual was noted to have an elevated serum phosphate value moments after cardiovascular collapse ensued, and subsequently with correction of the shock state and its accompanying acidosis the phosphate value returned to normal.

The body of this report details a discussion of the relationship of inorganic phosphate concentration to many clinical variables and stresses its interpretation in this light.

Clinical Summary

A 67 year old white male was admitted to Commonwealth Doctors Hospital with a four weeks history of symptoms of obstructive lower urinary tract disease. A transurethral resection, cystoscopy, and cystometric studies were accomplished without difficulty. On the eighth post-operative day, following an enema, he noted rectal pain, subsequent chest pain, and developed a shock-like state. Physical examination revealed a blood pressure reading of 40/0, and an EKG revealed a nodal rhythm. The lungs were clear and a loud systolic ejection murmur was audible but unchanged from prior examination. Following titratible doses of intravenous Isuprel, the patients' clinical picture improved and stabilized. The clinical picture and rise in LDH levels were left to be compatible with a pulmonary embolic phenomenon.

The pertinent laboratory data is presented in the following table: (Table I). It should be noted that the blood levels of Calcium and Phosphorus were obtained very shortly after the shock-like state ensued.

Discussion

A multitude of factors influence an isolated serum inorganic phosphate value, and the clinical interpretation of "abnormal" values should take this into consideration. Diet, parathyroid function, the time of day (diurnal variation), and growth hormone all may influence the uniformity of phosphate concentration. In addition renal function, (both tubular and glomerular function), the state of other ions in plasma, (especially calcium and even carbohydrate metabolism) may alter the state of phosphate in plasma.[2,3]

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Of prime importance is Ph as a basic regulator of phosphate concentration. The distribution of phosphate between (H_2Po4^-) and ($HPo4^{-2}$) is dictated by Ph, and experimental studies have demonstrated that in acute respiratory acidosis, serum inorganic phosphate levels tend to be elevated, and the converse is true in alkalosis. These changes are apparently due to shifts between intra and extra-cellular compartments, and possibly secondary to changes in intra-cellular metabolism of phosphates.[2,3,4,5]

Tranquada has described a group of patients with well documented lactic acidosis (blood lactate greater than 7.0 mm/liter) who exhibited markedly increased serum inorganic phosphate levels. As in our patient the level of phosphate was not related to uremia or concomitant change in serum calcium levels. Similar changes have been reported in animals subjected to lethal shock.

This apparently is the underlying etiology of the elevated phosphate levels seen in this individual. Although levels of pyruvate and lactate were not available, the clinical picture is very compatible with known causes of excess lactate as defined by Huckabee.[7,8]

It is suggested that serum inorganic phosphate levels may be utilized as a clinical indicator of lactic acidosis when these measurements are not readily available and when the clinical picture is compatible with this etiology. The afore mentioned variables should also be considered.

TABLE I

	CO_2	Calcium	Phosphorus	SGOT	LDH
11/19/68					
10:35 a.m.	15	10.8	9.2	46	824
5:00 p.m.	.....	.....	8.2	34	576
11/20/68					
a.m.	23.5	10.6	5.3	.....	.....
11/21/68					
a.m.	21	.....	2.9	.....	.....

All other laboratory tests were within normal limits.

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Severe School Phobia

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General information is presented about thirty-five cases of severe school phobias treated at the Virginia Treatment Center.

THE SETTING is a kindergarten in the basement of a church several years ago. Mothers are bringing their children who, for the first time, will be away from home several hours a day. Reactions differ, but all the mothers are a little anxious and so are the children.

Jerry did not want to stay and when his mother started to leave he ran to her, an expression of fear on his face; he grasped her hand and would not let go. She remained in the back of the classroom that morning, and soon Jerry was participating in the activities. The next day he was a little more relaxed, but wanted to leave when his mother started to leave. As long as she remained in the room Jerry was fine, but he watched with a "peeled" eye.

This kindergarten started the children in conversational French, and the enthusiasm of the teacher soon involved all of the children in repeating after her in French the names of various objects in the room: la porte, la plume, le crayon, etc. On the third day of nursery school the teacher introduced the word Madame. The children repeated in chorus—MA-DAME, MA-DAME. They were all absorbed.

A small hand shot up in the front of the room and a boy's voice said, "Teacher, teacher, my mama says God-damn. He repeated, "Madame, God-damn".

Jerry's mother no longer sat in the back of the room. She was on her feet, out of the room, in her car, and on the way home. Jerry did not notice that she had gone until later and the teacher reassured him with relative ease. Jerry's mother said later, "I figured if he could say that he could stay in school without me."

There was no further trouble in separating from Jerry, and he has gone to school quite happily ever after.

At the beginning of any school year in thousands of classrooms around the country some variation of this theme is repeated. The mutual anxiety surrounding the separation of mother and young child is probably, to some extent, a universal phenomenon. Fortunately, for most children it is mild in nature and short-lived. Being able to tolerate the anxiety surrounding these early, temporary separations, soon represents a giant step forward on the long road of individuation which must be traveled if the child is to succeed in becoming a person in his own right.

That the term "school phobia" is inaccurate is generally agreed. None of these children whose pattern of occasional, irregular or non-attendance at school which we call school phobia have a fear of school as the primary concern. They are all anxious, but the basic anxiety is concerned with the child-

Presented at the Annual Meeting of the Medical Society of Virginia, October 1969.

Powers, Douglas, M.D., *Director of the Virginia Treatment Center for Children, and Chairman and Professor of Child Psychiatry at the Medical College of Virginia.*

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mother relationship; hence, when this relationship is threatened, the separation anxiety surfaces and is expressed in the child's inability to reach or remain in school. Children with this pattern of behavior are to be distinguished from those with truant or running away behavior. The clue to the school phobic children is their continual physical-emotional proximity to the mother and the anxiety that ensues when this closeness is threatened. The truant or run-away may be anxious about many things—a bully at school, inability to achieve up to parental expectations, fear of failure at sports, discord at home, poor motivation. This child can separate from mother: it is a different picture.

Where are the origins of this prevalent problem? Its roots are to be found in the periods of development, prior to school age, and this partial failure of mastery of earlier psychological development leaves the child vulnerable. The child with any marked degree of school phobia may be viewed as a child who has not progressed satisfactorily in his development of autonomy. He is generally a child with a high level of ambivalent feelings regarding compliance and non-compliance, affection and anger. To a great extent this child has progressed through this early stage of mastery in such a tenuous manner that he has large remnants of insecurity woven in his fabric. Such children have unusual difficulty in establishing clear, comfortable relationships with father and mother. They have difficulty finding out where they fit into the family picture. In other words, the poorly resolved conflicts at these early stages of development hinder the child from continuing his development of autonomy so that he has an ever-increasing sense of his own identity as an individual. Almost invariably it is this kind of insecure pre-school development which the school phobic child has as his psychological heritage.

How does this come about? It lies in the early relationships of the family. Mothers of school phobics are usually emotionally insecure individuals themselves who have marked dependency needs that have not been met. They have a common history of unhealthy dependency relationships with their own mothers, which never have been resolved. They perpetuate this with their own offspring. That is accomplished through her spoken words, the way she holds the child, the limitation to explore that she imposes and her overall attitude of restriction of freedom. There are many channels of communciation open to the mother and the dominant emotional message that she sends to the young child is that she needs him with her. This starts early and soon a symbiotic relationship exists.

What about the fathers in this family problem? Though expressed in a number of ways, the fathers generally conform to a pattern which accentuates the problem. Predominately there is a history of being linked to an over-solicitous, dominating mother who had difficulty allowing them freedom to be. Usually the fathers of the phobic child are described as "being away" from the family, either physically or psychologically. It would often appear that they have chosen marriage partners with many of the same personality characteristics as their own mothers, and then in order to escape the trap have functioned on the periphery of their own family. Occasionally the father's own unmet dependency needs are expressed as a competitiveness with his wife in an over-protectiveness of the phobic child.

The attendance pattern of school phobias is varied. Attendance may be irregular, or not at all. They may refuse to go on Mondays. Refusal may come after some illness, either in the child or a member of the family. A move, transfer to a new school, a new baby in the family may precipitate the school refusal. It can be almost anything which upsets the delicate balance of the child's adjustment and with which his brittle ego cannot cope.

There are many related signs in the severe school phobic. He may be afraid to go other

places. Enuresis is common. Frightening dreams and sleepwalking are common. There is the fear that he will die, or that parents or siblings will die. Many of these children are withdrawn and depressed. The older ones may express suicidal threats and there may be actual attempts. Somatic complaints are commonplace—stomachache, headaches, vomiting, anorexia, dizziness, diarrhea, and sometimes asthma.

By the time the symptoms are full-blown the picture is extremely complicated. The entire life of the family may revolve around the phobic child. Frequently one hears, "This child controls the whole household." The total stance of the child is to prevent the separation from mother and to avoid the accompanying anxiety and panic that follows. This is often accomplished in adroit ways—promises, threats, denial that there is a problem, projection of all causes onto the external world and many others.

None of the principals, child, mother (or father), of course, recognize the basic factors involved in the phobia. So the charged relationships continue, the heat of the mutual anxieties feeding each other, and matters do not improve; they often get worse.

Most clinicians who have investigated and studied school phobias view it as a psychoneurotic reaction, based on unconscious conflicts. Many reasons are given by the child and family for the refusal to go to school; but these reasons are rationalizations, and the true reasons are unknown to them. This is an all-important point for anyone to know and remember who is trying to deal with a school phobic child. But it is often overlooked by physicians, school personnel, and sometimes psychiatrists. Presented with a child whose anger and rage and ability to control others is obvious, a mother whose ambivalence tells a child in words to go to school and who at the same time communicates her anxiety if he does, as well as a father who is often emotionally unable to help, there is the danger in trying to handle it all by common sense. "Common sense" may take the form of reassurance, physically dragging the child to school, repeated whippings, bribery and threats of all kinds. It may be possible to return a child to school with such methods, but the problem is hardly ever solved, particularly in the severe cases. Inside, the child is panic stricken and doesn't know why. This is hardly an ideal situation under which to pursue knowledge and often the anxiety is so great that the child disorganizes and can do nothing. Treatment must be aimed at relieving the underlying conflict in the child and helping the parents, particularly the mother, to understand their part in the matter.

Treatment plans may take many forms and depend on many factors—age of the child, time of onset, circumstances under which the refusal begins to develop, whether it is sudden or gradual in developing, and amount of awareness of the parents.

For children like Jerry, professional help is not needed. However, if the refusal is frequent or persists for any length of time, not only a pediatric examination is called for, but a psychiatric evaluation as well. The latter is to include the child, mother and father. It is a family problem.

Most of these cases can be handled on an out-patient basis, the mild ones often in a very short time. Others take considerably longer.

It is the severe group to which the remainder of this discussion is directed.

This group of children have proven very refractory to any attempt to help.

Over the past seven years thirty-five of these more difficult cases have been treated as in-patients at the Virginia Treatment Center for Children. Their ages ranged from eight years to fifteen years, with the vast majority falling in the eleven-twelve-thirteen year age group. Boys and girls were about equal in number. Overt symptoms had been present from several months to several years. Attendance patterns varied at the time of admission from an occasional day at school to complete refusal. Several

had been out of school for a year or longer. The most common pattern was a dragging on of symptoms, with complete refusal as the child moved into puberty. In several instances a move, change of school or illness had been the most obvious factor precipitating complete refusal.

All of these children had a long history of many somatic complaints. They were all extremely anxious. As a group they had a pervading, low self-esteem. Their behavior was immature; most were extremely afraid to express aggression. Their controlled simmering anger was obvious to the casual observer. Practically all of them were average to superior in intelligence, though most were behind academically.

In each case the child and mother were linked in a mutually hostile-dependent relationship. Most mothers were characterized as dominating and over-protective, fathers as rather passive and usually with little meaningful association with the child.

All had undergone various attempts at treatment, some by family physicians, local mental health clinics, private psychiatrists, psychologists or many combinations thereof. Duration of treatment was for months to years and often intermittent in nature. Too often coercion and bribery had been used to get a child back to school, but ultimately it was 100% ineffective.

Pre-admission plans were as follows:

1. Child and parents were brought to the out-patient clinic for psychiatric evaluation.

2. If the picture was clear, an interpretation was made to parents and child (sometimes all three together). The seriousness of the problem was pointed out and it was emphasized that it was a family problem and that in-patient treatment was needed. They were told that change was unlikely without intensive treatment. This they could understand, though often they did not like it, in view of the many efforts that had been made already without sufficient change.

3. They were told to return home and think about the matter for a week and let us hear from them. If they wished, we could then set a prompt admission date. Before leaving they were given a tour of the Center, including living units, and introduced to several staff and children. Referral sources were notified of our findings and recommendations and often were of great help in supporting the idea of admission. If we did not hear, family was reached by telephone and asked to come back for further discussion. Only a few cases did not follow through with admission, but each was filled with hesitations, starts and stops, reflecting their anxiety.

On the date of admission parents and child could be seen moving with slow, measured steps from the parking lot. The child and mother usually held to each other. Parents were permitted to go with child to the living unit and separate there; often they wished to "get it over with as quickly as possible" and preferred not to go to the unit. In either case mother and child (and sometimes father) flooded the floor with tears, and the child had to be separated physically from mother. This was done decisively, and parents usually left at once. Younger children usually cried and wailed, and older ones preferred to be alone to cry.

However devastated the child appeared to be immediately after the separation, and this was the rule, he frequently began to pull himself together within the hour. No one chastised him for crying and no one "babied" him, but nursing staff was always nearby and available. Other children became curious and asked the child questions. Pretty soon he would be drawn half-heartedly into some activity, and the uncontrolled crying and sobbing ceased. It recurred briefly at times often for a week or two but with a diminishing intensity.

Although not permitted a visit home for at least two weeks after admission, short visits were arranged at the Center if parents became too anxious. Letter exchanges were

encouraged and occasional telephone calls from child to parents.

Parents were seen in the OPD once a week if possible, and often twice weekly in the beginning. They would drive for great distances to keep appointments. In a few instances distance was so great and circumstances such that parents could seldom visit. Local public health nurses made home visits each week and a member of the VTCC Field Unit made a home visit from time to time.

In his day-to-day functioning the child's progress was often amazing. With rare exception they were involved in the intramural school program within three days and attendance was no problem. These children were often "picked on" by other children and sought protection from staff. This was given to prevent a child from being hurt by another, but the phobic child was continually reminded that he had to learn to fend for himself. Remember that he had had little practice at this.

All children were seen in individual psychotherapy one to five times a week with the aim of helping the child discover the sources of his ambivalent feelings and his tactics of evasion and avoidance. A therapeutic daily program was tailored for each child, aimed at helping him succeed in the different areas of living, to foster a developing independence and also to function as a part of a group. For instance, many times arrangements were made for a child to travel home by bus, sometimes for long distances. Many similar practices were directed toward building in the child the knowledge that he could do things for himself. Their inventory of accomplishments usually increases quite rapidly.

Treatment can be quite stormy and trying for staff, for these children with their great ambivalence have an expertise in manipulation of adults, with resulting animosity. In the therapeutic endeavor considerable attention must be directed toward helping child-caring staff understand the child's behavior, to avoid their reacting with counter hostility to the child's reservoir of anger. This would only recreate the unhealthy situation from which he came.

The thirty-five children in this series stayed in residence on an average between four and five months. A few stayed a year, the maximum allowable by law in this children's psychiatric hospital. The shortest stay was three weeks, with the child being taken out against medical advice.

Of the thirty-five children, twenty-eight were considered to be successful. The measure of this was that they returned to school on return home, the related symptoms diminished markedly or disappeared, and they were much happier children who did not have to spend all their time and energy in defending against separation anxiety.

At this time follow-up information covers several years to a few months. The more recent cases will be followed for several years.

This is not to say that these children have no problems, but at least they are not major ones and the children have been able to go on in a productive healthier adaption.

The seven cases that were considered not successful deserve brief comment.

All of these children made considerable school progress while in the hospital. All increased their self-esteem. All showed a diminution in related symptoms.

Five of these children were adolescents. Each of these seven children came from extremely disturbed and chaotic families, including psychosis, with whom our staff did not think we had been able to effect any change in basic attitudes.

One of the girls did not return to school and was married promptly. Another adolescent girl returned to school, but continued to have many other problems. One girl was much improved, but soon refused school and mother would not return her for readmission. One adolescent boy made much progress in all areas, but returned to his home where his father was an emotional invalid and mother was a near invalid, and

did not return to school. No follow-up was possible on another adolescent girl, but it is doubtful that she returned to school. One pre-adolescent girl was removed against advice and did not return to school. A pre-adolescent boy, although markedly improved here, continued very erratic attendance at school.

In each of these seven cases staff was of the opinion, even during the diagnostic phase, that the possibility of the child's returning home and living a fairly normal life was extremely unlikely. None of these parents could entertain the idea of the child going somewhere else to live.

Apparently our efforts were too late and too little in the face of odds that were too great.

Our thoughts about the in-patient treatment of severe school phobias, on which little information has been reported, is as follows:

1. Though separation of parent and child, in a situation at which both panic at the thought, appears to be a drastic move, it may be the last heroic effort that can be made to solve the conflicts and return a child to school. The longer a child is out of school despite all therapeutic efforts the less likely he is to return. He continues to fall behind academically and this becomes a deterrent to his returning.

2. If admission does occur, staff must be geared to an all out effort to deal with the pinnacle of anxiety and panic that is likely to occur in mother and child. This is often easier to deal with in the child than the parents. Caseworker and child psychiatrist must be available for impromptu appointments and telephone calls from anxious parents. After the initial phase, parents and child learn that, even though uncomfortable, each can survive on his own. Children handle this with greater facility than parents. For both this holds a promise for their future.

3. The separation often gives all concerned a chance to breathe, to sort out their conflicting emotions; and many parents become highly motivated to find a better way to live with the child. Often mother and child have become physically and emotionally exhausted in their day-to-day struggle with their hostile-dependent relationship. Frequently parents discover a new relationship between themselves that has been absent or dormant for years; they find time for and interest in each other.

4. The child finds himself in an environment with certain expectations that he can stand up for his rights. He is thrown into close relationship with other children where he cannot be omnipotent, and he begins to learn how to cope with group living. He is in a living situation where his assets are recognized and where adults express trust in him. He begins to trust himself. Though they protest admission, and scream "bloody murder," many actually appear to be relieved that someone has intervened and to an extent taken the power away from them. This would make good sense in light of frequent comments in the psychoanalytic literature that these children are terrified of their seeming omnipotence and magical thinking which they have carried over from early childhood.

5. He is back in school and achieving, and at some level of awareness this must demonstrate to him that school is not the main problem. It makes it easier for him to make sense out of his defensive maneuvering. He sees other children with problems, some with school phobia, and he sees children return for visits who have largely solved their problems. He becomes curious about these other children and sees some hope for solving his problems.

Summary

This presentation has emphasized that the underlying conflict in school phobias begins as a bilateral separation anxiety between mother and young child. This unhealthy symbiotic relationship, during the time that the child is trying to develop his own au-

tonomy, cripples his ability to cope with the separation anxiety when he goes to school, or in the face of certain life events, such as a move, illness, birth of a sibling, which revive this early anxiety. The response is a disturbed pattern of school attendance which may be from mild to severe and acute to chronic. These basic conflicts represent a neurotic reaction of which child and mother are not aware.

General information has been presented about thirty-five cases of severe school phobias treated at the Virginia Treatment Center during the past seven years. Twenty-eight of these cases have been successful and seven are regarded as unsuccessful. From this experience it is our impression that inpatient treatment for severe school phobias should be tried, rather than continue in a variety of other efforts at treatment which have been ineffective. The longer these conflicts continue without effective treatment, the further the child falls behind and the chances of his successful return to school lessened.

We have emphasized the importance of early psychiatric diagnosis and treatment once a school phobic pattern evolves and have highlighted the difficulties and vicissitudes surrounding treatment of the severe school phobic child.

Unfortunately, not all children have the healthy base as Jerry did for handling his early school anxiety. Many children reach the severe proportions described previously. Even so, this demonstrates that many severe school phobias can have a reasonably successful outcome.

Medical College of Virginia
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Precautions: Do periodic serum electrolyte and BUN determinations. Do periodic hematologic studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in postsympathectomy patients. The following may occur: hyperuricemia and gout, reversible nitrogen retention, decreasing alkali reserve with possible metabolic acidosis, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), digitalis intoxication (in hypokalemia). Use cautiously in surgical patients. Concomitant use with antihypertensive agents may result in an additive hypotensive effect.

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Cancer Trends....

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Edited by—

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Should We Change Our Primary Treatment for Breast Cancer?

In our first offering for "Cancer Trends" (October, 1967)[1] one of us (J.S.H.) presented the argument for continuing to utilize the Halsted radical mastectomy as preferred treatment for primary operable carcinoma of the female breast. The purpose of this editorial is not to contradict the ideas expressed in this paper, but, instead, to attempt to achieve a rational and appropriate perspective in regard to the continuing controversy over the optimal therapy for breast cancer. Fortunately surgeons have now achieved enough scientific maturation to be able to discuss the problem with some degree of objectivity and, hopefully, to separate our opinions from the actual facts at our disposal.

Halsted published his first description of radical mastectomy in an interesting article on wound healing in the Johns Hopkins Hospital Reports in 1890-91.[2] Removing the breast containing the primary tumor with the regional lymphatics, en bloc, has proved to be an effective means of management of the local problem in patients without metastatic spread beyond the anatomical limits of the operation. Except for minor differences in technique, this operation then became the mainstay of surgeons for the treatment of breast cancer in this country. In 1948 Professor Robert McWhirter[3] of the University of Edinburgh challenged the concept that radical mastectomy was superior to all other methods of treatment for breast cancer when he first reported his own end results with simple mastectomy and radiation therapy. In earlier years it had been customary to consider metastatic carcinoma in lymph nodes rather unresponsive to radiation therapy. His surprising suggestion that a plan of therapy involving radiation to these nodes was as good or better than radical mastectomy led initially to an indignant response on the part of most surgeons who felt that optimal treatment of breast cancer had been established. It is of some interest that this question is still unresolved more than 20 years after McWhirter's initial paper.

For many years the breasts have been the most common site of cancer in women in the United States and it seems difficult for many to understand why this apparently simple question has not been answered. There has certainly been no shortage of statistical comparisons of differing means of therapy but the validity of most attempts to clarify the situation has usually been in question due to many factors. First of all, the stage of disease considered suitable for primary curative treatment varies between institutions in different parts of the world, and the stage of disease at the time of the first treatment has undoubtedly varied in the individual groups giving rise to these comparative statistical reports. Secondly, the addition of adjuvant therapy, such as oophorectomy or hormone therapy, has

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Sponsored by the Professional Education Committee, Virginia Division, American Cancer Society.

often clouded the issue regarding the value of the primary treatments being compared. Who can say with any accuracy that equivalent populations of patients are being compared when we are trying to select the ideal treatment on the basis of results obtained with radical mastectomy at the Mayo Clinic with results obtained with an alternative treatment in Scotland, Canada, or elsewhere? Too many factors other than primary treatment method confuse the results, and the final figures in each comparison differ too little for us to ignore the lack of uniformity of these patient groups.

Once this initial question was raised regarding the superiority of radical mastectomy, the "plot" began to thicken. Simple mastectomy without irradition therapy was proposed by Crile[4] and others for Stage I carcinoma of the breast. He based this approach on the possible theoretical advantage of preserving the regional lymph nodes as a means of host defense. At first glance this approach sounded unacceptable since we can all recall many patients with microscopic metastases in the axillary nodes that were not palpable prior to surgery (30-40% of patients). However, he defies us to demonstrate that excision of regional lymph nodes at this stage is more beneficial in terms of survival rates than awaiting clinical involvement of these nodes. In his own series he feels he has demonstrated better five and ten year survival rates using this approach.[5] Although one can, and properly should, draw attention to the possibility of patient selection in such a statistical comparison, we must also admit there are no reliable data to prove that he is wrong in his contention.

A number of surgeons have followed a "middle of the road" policy in this matter by designing and performing less complete modifications of radical mastectomy that usually include removal of axillary nodes without resection of the pectoral muscles.[6] To the surgical "purist" these operations seem incomplete but data are not available to demonstrate that these and other modifications of treatment are actually inferior to Halsted's radical mastectomy. More recently there has even been some popularization of simple excision of the breast mass ("lumpectomy") combined with reliance on radiation therapy for control of residual carcinoma in the breast and regional nodes. Each approach has one or more supporters who present statistics that are carefully selected to confirm their own bias. In some ways this controversy of increasing complexity polarizes the "establishment" (proponents of radical mastectomy as the sole acceptable treatment) at one end, and the dissenters (proponents of all other treatment methods) at the other. In this confrontation there appear to be valid arguments to support more than one point of view, but a proper resolution of these questions demands the application of the scientific method by use of randomized clinical trials.

The morality of clinical trials for evaluation of treatment has clear-cut demands. The first, and most important, is the actual fact that we do not know whether there is an advantage of one treatment method over another. To participate in such a study we must be convinced that any of the alternatives might reasonably lead to better results in our patient population. Once data have been generated it is also imperative that the study be discontinued if and when the superiority of one approach is established in terms of statistical significance. Only when these demands can be met is it justifiable for a physician or group of physicians to embark on a randomized clinical trial. All of these criteria can be honestly met in regard to the choice of therapy for primary operable breast cancer. Such a study is, therefore, not only warranted, but absolutely essential, if we are to provide the best possible treatment for future patients with this disease.

A few clinicians have clamored in the past for a randomized prospective clinical evalu-

ation of treatment alternatives for breast cancer so that our choice of treatment can be based on scientific facts. McWhirter and Bruce in Edinburgh have attempted to accomplish this by initiation of a randomized study comparing radical mastectomy with simple mastectomy and postoperative radiation. A randomized study comparing the latter method with "extended" radical mastectomy has been reported from Copenhagen by Kaae and Johnasen.[7] Neither of these studies have thus far demonstrated superiority of either treatment alternative, but there have been objections raised regarding some details of these studies as well as the total number of patients evaluated. It is still essential for us to have a convincing, properly conducted, randomized clinical trial to determine the relative merits of simple mastectomy and radical mastectomy as well as the importance of other variations.

The National Surgical Adjuvant Breast Project has demonstrated its ability to produce enough information in terms of numbers and statistical reliability to answer these questions. Data from cooperative studies performed by this group have effectively dealt with questions regarding the value of prophylactic oophorectomy[8] and the value of postoperative radiotherapy[9] as adjuvants to radical mastectomy for the primary treatment of breast cancer. Although both of these adjuvants to radical mastectomy have been employed widely in this country on the basis of personal impressions and incomplete data, the prospective randomized studies designed to evaluate these adjuvants have shown they produce no benefit in terms of survival figures. This same cooperative study group is now in the process of initiating a carefully controlled clinical trial of the efficacy of radical mastectomy and simple ("total") mastectomy with and without radiation.[10] This seems to be the only way to obtain answers to the questions posed, and there is no evidence at this time that any patient will receive less desirable treatment than another by randomized allocation to one or the other of various groups with different treatment alternatives.

You might say that this chain of logic is all very well, but how should I treat the very next patient who comes to my office with primary operable breast cancer? We believe the answer is that you should not vary your treatment from what you have considered desirable treatment in the past. If you have routinely applied radical mastectomy, you should continue to do so. There are no more reasons to arbitrarily change to another approach on the basis of any data that has been presented than to feel confident that radical mastectomy has been established as the very best method. The major reason for presenting this confusing subject in this column is to develop an understanding of the problem on the part of physicians in our state, rather than to convince anyone that they should now modify their current therapeutic approach to breast cancer. Both of our cancer programs in our medical schools in Virginia are seriously considering entrance into the cooperative study described above as we think we can make a useful contribution. We hope that this discussion will lead to a better understanding of the current status of the problem, the need and justification for clinical trials, and an unwillingness to modify treatment merely on the basis of new "fashion" alone. The individual surgeon is unable to launch a clinical trial of the magnitude required, but he must be both critical of, and responsive to, the facts we hope to obtain.

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(*Continued on page 775*)

Diagnostic Laboratory Medicine....

H. P. DALTON, Ph.D.
M. R. ESCOBAR, Ph.D.
M. J. ALLISON, Ph.D.

Antimicrobial Susceptibility of Common Bacterial Species—1969

The percentage of strains of common bacterial species which are susceptible to a particular antibiotic has been tabulated for the past several years by the Division of Clinical Pathology of the Medical College of Virginia. In practice, these data serve as a valuable guide to the attending physician who may have to choose empirically the antimicrobial agent when treating his patients. It was decided previously to review the pattern of bacterial susceptibility which may vary from year to year for a variety of reasons, such as susceptibility changes or the marketing of new therapeutic agents.

The sensitivity pattern of 15 bacterial species for 14 antimicrobial agents are listed in Table 1. The results were obtained from disc diffusion studies (Bio Quest discs) on blood agar plates which had been uniformly spread with the organisms. This technique is controlled frequently by parallel tube dilution susceptibility studies. The bacterial species tested were all freshly isolated and in pure culture. The percentage of strains susceptible to the commonly used antimicrobial agents appears to be similar to that reported for the previous 4 years. However, there is some variation of interest on which some comment can be made.

There are four new groups included in the table: Salmonella, Citrobacter, Clostridium and Bacteroides. Three organisms have been deleted, *Staphylococcus epidermidis*, alpha hemolytic Streptococcus and beta hemolytic Streptococcus, not group A. The additions were made because of a larger sample size of isolates of those organisms than in previous years. The latter were excluded because: S. *epidermidis* exhibits an antimicrobial pattern similar to that of S. *aureus;* the two Streptococci are almost always susceptible *in vitro* to penicillin. The enteric Streptococcus group was retained

TABLE 1

ROUTINE CULTURE SENSITIVITY—1969*

ORGANISM	Total	Penicillin (10)	Ampicillin (10)	Methicillin (5)	Cephalothin (30)	Erythromycin (2)	Tetracycline (30)	Streptomycin (10)	Kanamycin (30)	Chloromycetin (30)	Neomycin (30)	Polymyxin (50)	Coly-Mycin (10)	Furadantin (100)	Nalidixic Acid (30)
Staphylococcus aureus	1,871	56	67	99	97	87	79	76	77	89	ND†	ND†	ND†	95	10
Streptococcus (enteric)	935	94	99	44	73	83	56	25	84	91	ND†	ND†	ND†	97	12
Escherichia	3,940	0	65	0	85	0	73	69	92	91	95	94	95	94	86
Citrobacter	42	0	33	0	38	0	71	81	90	96	100	90	95	73	67
Salmonella	36	17	94	14	100	7	94	100	69	100	97	75	83	71	57
Aerobacter	1,453	0	12	0	30	0	68	71	66	75	84	91	84	82	68
Klebsiella	2,667	0	9	0	76	0	69	73	83	85	98	85	100	76	50
Serratia	626	0	1	0	3	0	15	23	71	35	63	13	14	5	16
Proteus morganii	577	44	69	0	73	0	18	84	97	90	95	1	3	27	60
Proteus mirabilis	1,514	84	84	0	90	0	6	86	98	93	92	1	2	24	59
Proteus rettgeri	205	33	75	3	69	3	12	83	85	76	86	0	6	22	51
Pseudomonas	2,091	0	1	0	5	0	20	68	60	26	97	87	97	2	4
Herellea vaginicola	328	0	36	7	11	18	77	61	95	55	95	83	96	11	52
Bacteroides species	42	48	55	21	40	88	86	31	10	86	ND†	20	12	ND†	ND†
Clostridium perfringens	56	86	89	89	75	89	93	21	ND†	95	ND†	ND†	ND†	ND†	ND†

*Figures in parentheses represent the antibiotic concentration in μg used.
†ND=Not done.

(*Continued on page 773*)

Mental Health . . . .

ROBERT L. DIRKS

Community Mental Health and Mental Retardation Services Act

The Virginia Department of Mental Hygiene and Hospitals' most recently innovated program is the Community Mental Health and Mental Retardation Services Act. This Act, more commonly known as Chapter 10, was instituted by action of the 1968 Session of the General Assembly which created Chapter 10 of Title 37.1, Code of Virginia. Through action of the 1970 General Assembly, the Department of Mental Hygiene and Hospitals was allocated a total of 1.8 million dollars for the 1970-72 Biennium for the implementation of the Act and an additional allocation of 1.5 million dollars for construction of Mental Health Centers and Mental Retardation Facilities.

Under Chapter 10, the Department is permitted to make matching grants on a 50/50 basis ($1.00 local money, $1.00 state money) to the locally established Services Boards for approved programs which would be locally administered. Local governments, wishing to participate under Chapter 10, must first establish a Community Mental Health and Mental Retardation Services Board for which the basic criteria is a minimum population of approximately 50,000 or more and might encompass a single city, a single county or a combination of cities and counties located within any given Planning District. Once official action is taken by a local government to establish a Chapter 10 Board, the members, between five and 15 in number, are appointed by said government. Because this Board has been established by the local government or governments, it becomes a direct agency of the entity which has created it and is responsible for the development and administration of mental health and mental retardation services and facilities.

The first duty of the established Services Board is to review and evaluate community mental health and mental retardation services and facilities, both public and private, available to serve the community. Upon completion of this review and evaluation the Services Board submits to the local government of which it is an agency a program of mental health and mental retardation facilities. The potential for the development of comprehensive services includes, but is not limited to, inpatient, outpatient, partial hospitalization, emergency services, consultation, rehabilitative and inpatient diagnostic and treatment services. The scope of development of services through the Chapter 10 matching grant program remains with the local Services Board in determining its needs and priorities.

The goal of the Community Mental Health and Mental Retardation Services Act is to permit the Department to participate with the local communities in the full range of continual comprehensive community mental health and mental retardation services. The ultimate objective in the field of mental health is the development of a Comprehensive Community Mental Health Center which would provide for outpatient, inpatient, emergency, consultation, partial hospitalization and information and education services; in the field of Mental Retardation, a wide scope of services which may be in the form of Sheltered Workshops, Day Care Centers, Pre-School Activities, Adult Activ-

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Approved for publication by the Commissioner, Department of Mental Hygiene and Hospitals.

ity Centers, temporary Residential Care facilities.

In contrast to the Department's Mental Hygiene Clinic System, which is limited to outpatient services and aftercare, the Community Mental Health and Mental Retardation Services Program is unlimited in potential for the development of the various needed services within a given area. While the Mental Hygiene Clinic System is a State-operated program, the Community Mental Health and Mental Retardation Services Act is a matching grant program which is locally administered, with grants being made to the local Services Boards annually. All employees hired under the Services Program become employees of the local government which has established the Chapter 10 Board.

In several areas of the Commonwealth there are presently operating within the same area, a Mental Health and Mental Retardation Services Board program as well as a Mental Hygiene Clinic under the Department of Mental Hygiene and Hospitals. Therefore, in the Department's review of the proposed program under Chapter 10, we believe it to be vital that the services do not overlap but are in fact complementary to one another and by coordination expand the services available to the community.

Another objective of the Community Mental Health and Mental Retardation Services Board is to become eventually the recognized mental health and mental retardation coordinating agency within its service area. In this role the Services Board would serve as a catalyst for the continuous review and evaluation of mental health and mental retardation services, attempting to bring together the various agencies, private and public, serving the mentally ill and mentally retarded within their service area, to prevent fragmentation and bring about a continuity of care.

Since the inception of the Community Mental Health and Mental Retardation Services Act in 1968, there have been 15 Services Boards established throughout the Commonwealth with at least six additional proposed Services Boards which will be established during the biennium period. Of the 15 officially established Services Boards, nine have submitted their applications for matching State grants which have been approved by the Department. State matching grants under the Community Mental Health and Mental Retardation Services Act have been made to the City of Alexandria; County of Arlington; Charlottesville City and Albemarle County; City of Chesapeake; Fairfax City and County and the City of Falls Church; City of Norfolk; City of Portsmouth; Roanoke City and County and City of Salem; the City of Virginia Beach. The total State Funds granted to these Services Boards for the period beginning July 1, 1970, and ending June 30, 1971, is three hundred and fifty-one thousand dollars matched with local expenditures of six hundred and twenty-six thousand dollars which makes a total program cost for funded services under the Community Mental Retardation Services Act, of nine hundred and seventy-seven thousand dollars.

The first matching grant for Mental Health Center Construction under this Services Act has been committed to the City of Portsmouth in the amount of four hundred and fifty thousand dollars. This will be matched with four hundred and fifty thousand dollars from Maryview Hospital which will be the applicant for the Mental Health Center. This total sum of $900,000 will be matched by the Federal government under PL 88-164 (Community Mental Health Centers Construction Act) in the amount of 1.2 million dollars, which makes a grand total for the construction of the Mental Health Center at Maryview Hospital in the City of Portsmouth of 2.1 million dollars. This Mental Health Center, upon its completion, will provide for inpatient services, partial hospitalization, 24 hour emergency service, consultation and education and outpatient and aftercare services. The outpatient and aftercare services will

be coordinated on a contractual basis with the Portsmouth Mental Hygiene Clinic which is State-operated. The Department is anticipating in the immediate future, Chapter 10 matching grant applications from Prince William County, the City of Richmond, the Central Virginia area which includes the City of Lynchburg, Amherst County, Appomattox County, Campbell County, Bedford County and the City of Bedford; the Radford area which includes Montgomery County, Floyd County, Pulaski County, Giles County and the City of Radford. There is also a proposed Mental Health Center construction plan forthcoming from the City of Alexandria. Other areas are planning to submit to the Department, in the near future, their proposed applications for funding of mental health and mental retardation services but are still in the developmental phase.

The Department believes that the Community Mental Health and Mental Retardation Services Act have been a great innovation and that it offers the local governments the administrative authority and control over these services and is most happy to participate with the local governments on a matching basis.

DIAGNOSTIC LABORATORY MEDICINE—

Antimicrobial Sensitivity of Common Bacterial Species—*(Continued from page 770)*

since these organisms are considered to be the most resistant among the commonly isolated Streptococci. As in previous reports, there have been no penicillin resistant strains of beta hemolytic Streptococcus group A or of *Diplococcus pneumonia* isolated.

Among the gram negative bacilli, the Herellea and Serratia groups continue to show an increase in the frequency of isolation from clinical material and also show a marked degree of resistance to antimicrobial agents. As seen in Table 1, Serratia is the most resistant organism commonly isolated in this institution.

The antimicrobial pattern of two anaerobic organisms, *Clostridium perfringens* and Bacterioides species, reflect the pattern reported in other studies. The Bacteroides strains showed 50% susceptibility to penicillin, whereas the majority of isolates of *Clostridium perfringens* were sensitive to the same agent.

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Virginia Regional Medical Program....

EUGENE REYES PEREZ, M.D.
Richmond, Virginia

The Virginia Regional Medical Program (VRMP) was organized to implement the provisions of Public Law 89-239, generally known as the "Heart Disease, Cancer, Stroke and Related Disease Program". The purpose of the Law, recently changed to include Kidney Disease, is to strengthen medical care in the categorical diseases by fostering new voluntary cooperative arrangements and providing a link between medical knowledge and the application of this knowledge to patient care.

Recommendations by Virginia physicians, hospital administrators, nurses, allied health personnel and other community leaders stimulated the development of six projects (all related activities) which were funded in March and July, 1970, and are presently in operation.

Three of the present funded activities focus on heart disease, one on stroke, one on continuing education for nurses in the categorical diseases, and one on library and medical information services. One additional activity, a statewide tumor registry, has been approved and planning is well underway for full implementation when funds are available.

A four-week comprehensive course in Coronary Intensive Care for registered nurses has been established under the direction of Alston W. Blount, M.D., at the Medical College of Virginia. A two-week physician training course, also under Dr. Blount's direction, has also been organized. Approximately 25 nurses and four physicians have completed the training courses to date.

An effort to evaluate coronary care throughout Virginia in order to provide improved patient care is being made. Lockhart B. McGuire, M.D., at the University of Virginia School of Medicine is presently analyzing operations in a group of participating hospitals in the Region to measure performance of coronary care units.

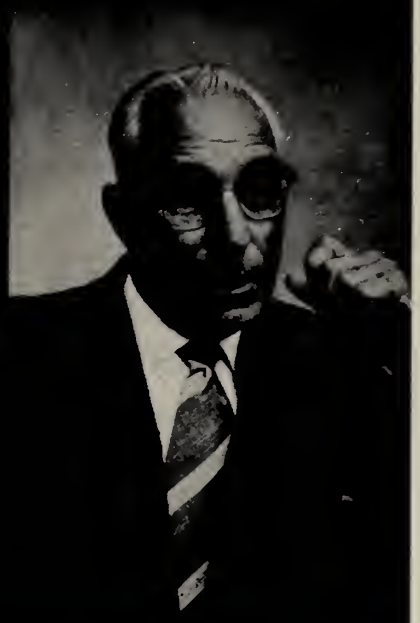
The Virginia Heart Association is conducting a Cardiopulmonary Resuscitation Training Program for physicians, nurses, and other health professionals in the hospital setting. Since this program began, 42 M.D.'s, 1,494 R.N.'s, and 293 paramedical personnel have been trained. It is planned that by 31 December 1970, a total of 51 training teams, with physician members, will have been trained.

Approved, but not funded, and in process of development is a central registry of cancer cases for Virginia. In the initial phase, six hospitals will submit data to the Central Registry. If funds are available, the Central Registry will then be expanded to include other hospitals throughout the Region. This project is under the direct supervision of the VRMP central office in Richmond.

A demonstration project is seeking to improve management of stroke patients in rural areas by interchange of information between a medical center and the physicians and other health professionals in the community. Blackstone is the pilot community for the study. Cary Suter, M.D., at the Medical College of Virginia is Project Director.

A community-based Continuing Education Program for Nurses in the categorical diseases has been established, and is under the administration of the Virginia Nurses' Association. Nursing coordinators will be located in five educational institutions throughout the State. One-day workshops on heart disease, cancer, stroke, kidney and

"Drug research gives me the tools that save lives."



A family doctor looks at new developments in the pharmaceutical industry. And he speculates on the future.

When I look back at some of my old records, I'm constantly reminded of the changes that have come about in medicine just during the past twenty-five years. Some of the diseases I treated and prayed over in the '40's are found mostly in medical history books now.

Thanks to drug research and development, we've made substantial gains in the control of cardiovascular disease, diabetes, malaria, mental illness, strep and staph infections, meningitis and a long list of ailments. It seems like only yesterday when a diagnosis of pneumonia was almost the kiss of death. Now, with modern medical techniques and drug therapy, we can offer some real help.

My records on polio, influenza and measles show an unbelievable trend for the better. New vaccines have reduced the toll of these age-old threats dramatically. And I see patients in pain from crippling arthritis helped with new medicinals unknown just a few years ago.

I hear questions about the three billion or so dollars spent by the drug industry in research during the past ten years . . . working on new and better drug products. It does seem like quite a bit of money to spend, and I realize some of it goes into dead ends. That's the problem with research, any research . . . you often don't know where you're going until you get there. I want all the tools I can get to help my patients. I want more drugs and more effective drugs. If they mean less pain, longer lives and more productive careers for those I treat . . . well, that's what really counts.

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Efudex presents the physician with a topical alternative to surgery in the treatment of solar or actinic keratoses. It is effective, comparatively inexpensive and especially well-suited for treatment of multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective on first and later applications

In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When lesions did recur or new ones appeared, repeated courses of Efudex therapy proved effective.*

1/22/68—Treatment with 5% 5-FU cream commences. Patient K.L. showing widespread but mild solar keratoses (also known as actinic keratoses).



/68—After 11 days of treatment. thema is seen at site of keratoses. In ition, numerous lesions not apparent r to therapy have become manifest harply defined reactions. Intervening , also treated, shows no response to apy.

9/69—One year after cessation of apy. Skin appears clear with no evi- ce of scarring. Examination reveals of recurrence or the formation of lesions.



Predictable sequence of therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of the keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two to three months before gradually receding.

Selective—with a high degree of safety

Despite the temporary unsightliness and discomfort of the inflammatory episode, Efudex is, in general, more readily tolerated than surgery. Clinical work shows the intense inflammatory response to be limited to the area of the lesion. Normal skin is not similarly affected. Another measure of Efudex safety: systemic absorption of topical fluorouracil was insignificant, indicating a low risk of systemic toxicity.*

Two strengths—two convenient dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, there are two important considerations. First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey.

2% and 5% Solutions; 5% Cream Applied twice daily—resolves solar or actinic keratoses.

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Description: Efudex solutions and cream are topical preparations containing the fluorinated pyrimidine 5-fluorouracil, an antineoplastic antimetabolite.

Efudex Solution consists of 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris-(hydroxymethyl) aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream contains 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Actions: There is evidence that the metabolism of fluorouracil in the anabolic pathway blocks the methylation reaction of deoxyuridylic acid to thymidylic acid. In this fashion fluorouracil interferes with the synthesis of deoxyribonucleic acid (DNA) and to a lesser extent inhibits the formation of ribonucleic acid (RNA). Since DNA and RNA are essential for cell division and growth, the effect of fluorouracil may be to create a thymine deficiency which provokes unbalanced growth and death of the cell. The effects of DNA and RNA deprivation are most marked on those cells which grow more rapidly and which take up fluorouracil at a more rapid pace. The catabolic metabolism of fluorouracil results in degradative products (*e.g.*, CO_2, urea, α-fluoro-β-alanine) which are inactive.

Studies in man with topical application of ^{14}C-labeled Efudex demonstrated insignificant absorption as measured by ^{14}C content of plasma, urine and respiratory CO_2.

Indications: Efudex is recommended for the topical treatment of multiple actinic or solar keratoses.

Contraindications: Efudex is contraindicated in patients with known hypersensitivity to any of its components.

Warnings: If an occlusive dressing is used, there may be an increase in the incidence of inflammatory reactions in the adjacent normal skin.

Prolonged exposure to ultraviolet rays should be avoided while under treatment with Efudex because the intensity of the reaction may be increased.

Usage in Pregnancy: Safety for use in pregnancy has not been established.

Precautions: If Efudex is applied with the fingers, the hands should be washed immediately afterward. Efudex should be applied with care near the eyes, nose and mouth. To rule out the presence of a frank neoplasm, a biopsy should be made of those areas failing to respond to treatment or recurring after treatment.

Adverse Reactions: The most frequently encountered local reactions were pain, pruritus, hyperpigmentation and burning at the site of application. Other local reactions included dermatitis, scarring, soreness and tenderness.

Also reported were insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity and lacrimation.

Laboratory abnormalities reported were leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Efudex should be applied twice daily with a nonmetal applicator or suitable glove in an amount of the solution or cream sufficient to cover the lesion. When Efudex is applied to a lesion, a response occurs with the following sequence: erythema, usually followed by vesiculation, erosion, ulceration, necrosis and epithelization. The lower frequency and intensity of activity in adjacent normal skin indicate a selective cytotoxic property. Medication should be continued until the inflammatory reaction reaches the erosion, necrosis and ulceration stage, at which time use of the drug should be terminated. The usual duration of therapy is from 2 to 4 weeks. Complete healing of the lesion may not be evident for 1 to 2 months following cessation of Efudex therapy.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).

Clinical Studies: The effectiveness of the three preparations as determined by complete involution of solar keratoses was: 2% Solution, 77% of 282 lesions; 5% Solution, 88% of 202 lesions; and 5% Cream, 85% of 189 lesions. In those lesions where complete involution followed treatment, the rate of possible recurrences observed clinically at periods up to 12 months or more was: 2% Solution, 4.6% of 218 lesions; 5% Solution, 1.7% of 177 lesions; and 5% Cream, 5.6% of 160 lesions. Because of the toxic potential of fluorouracil, some physicians preferred to use the 2% solution when large areas were to be treated. Approximately 30% of the lesions required treatment for two weeks or less; approximately 78% required four weeks or less for adequate treatment.

ROCHE Roche LABORATORIES
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Nutley, New Jersey 07110

related diseases, with follow-up workshops on a continuing basis will comprise a major portion of the program. Two nursing coordinators have been employed, and the workshops are presently underway.

The Virginia Medical Information System (VAMIS) is a statewide biomedical library service, utilizing the resources of the two major medical libraries in the state, at the Medical College of Virginia and the University of Virginia. The information system has organized a network for interchange of biomedical information among the State's medical centers, community hospitals, and practicing health professionals. Assistance will be given to libraries at the community hospital level. Between 1 July and 30 September 1970, 1,693 interlibrary loan requests were filled. Of these requests, 1,288 had been made by physicians.

An eighth project, The Virginia Model Multiphasic Health Screening System, has been approved but not funded. Robert W. Jessee, M.D., at the Medical College of Virginia is Project Director.

The advance of knowledge changes the nature of medical care and, therefore, regionalization should be viewed as a continuous process rather than as a plan which is totally developed and then implemented. This will require continuing interest and involvement at all levels. Future activities must be high in excellence, innovative, and truly regional in character if they are to compete successfully for funding in this time of unprecedented demands on the national budget.

CANCER TRENDS—*Should We Change Our Primary Treatment for Breast Cancer?*—

(*Continued from page 769*)

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Medicare (Part B)....

CURTIS J. KELLY, J.D.
Administrator

Physician and Supplier Statement Explanation of Medicare Benefits

When *assigned* charges are reduced to meet "reasonable charge" criteria, the Explanation of Medicare Benefits form which is sent to the beneficiary states, "This charge was reduced. You are not responsible for paying the difference between the actual charge and the allowed charge." This statement is correct as concerns either physicians' or suppliers' charges which have been assigned. The statement would not be correct for charges which are non-assigned.

In preparing the Explanation of Medicare Benefits form for the beneficiary, our procedure permits both assigned and non-assigned charges to be included on the same form. *The specific charge to which the remark applies is prominently identified by an asterisk and the wording of the remark is preceded by an asterisk.* It is intended that the remark apply only to the charge thus identified. This charge would always be one which has been assigned.

Based on the foregoing, therefore, it is possible that a physician who did not accept the assignment of Medicare benefits may have his charges shown on the same Explanation of Medicare Benefits form with other physicians' or suppliers' charges that were assigned. If one of their assigned charges were reduced because of "reasonable charge" criteria, the remark would appear; but it would apply *only* to the specific charge identified by the asterisk and would not apply to any non-assigned charges.

On occasion physician's offices may receive telephone calls from patients who refer to a specific note on the Explanation of Medicare Benefits form and the nurse will refer to the notes on the reverse of the Physicians and Suppliers Statement to ascertain its meaning. This may lead to problems since the "Physician and Supplier Statement" received by the assignee and the "Explanation of Medicare Benefits" form received by the beneficiary can both refer to a specific note on the reverse side of the form. The notes on the reverse of the two forms are *not* similar in language or content.

Example: On the beneficiary's Explanation of Medicare Benefits, Note 1 indicates "Medical Care", Note 2 "Surgery". However, on the Physician and Suppliers Statement, Note 1 indicates "Coverage Not in Force", whereas Note 2 is concerned with reasonable charge. For the reason just given, it is not advisable to answer technical questions raised by the beneficiary unless the form in question is closely reviewed.

The Medical Society of Virginia . . . .

Minutes of Council

A meeting of the Council of The Medical Society of Virginia was held on Sunday, October 11, at The John Marshall Hotel, Richmond.

Members Present: Dr. William Grossmann, Dr. James M. Moss, Dr. F. Ashton Carmines, Dr. Dennis P. McCarty, Dr. Harry J. Warthen, Dr. Thomas S. Edwards, Dr. Raymond S. Brown, Dr. William F. Hotchkiss, Dr. William R. Hill, Dr. George J. Carroll, Dr. F. H. McGovern, Dr. John A. Martin, Dr. W. D. Liddle, Jr., Dr. Carl E. Stark and Dr. Carl P. Parker, Jr.

Others Present: Dr. Arthur A. Kirk, Third Vice-President; Dr. William J. Hagood, Jr., Vice-Speaker; Dr. W. Linwood Ball, Dr. Alexander McCausland and Dr. W. Callier Salley, AMA Delegates; Dr. Kinloch Nelson, Dean, Medical College of Virginia; Dr. William S. Allerton, Commissioner, Department of Mental Hygiene and Hospitals; and Mr. Chad P. Combs, Department of Field Service, American Medical Association.

Rubella

The Rubella Task Force of the Virginia Association for Retarded Children had requested that The Medical Society of Virginia endorse its Statewide immunization program. It brought out that an epidemic of rubella is anticipated in January or February, 1971.

Dr. Gillespie, representing the State Department of Health, advised Council that the Department would welcome all available assistance. He reported that over 1,000 school based clinics and 30 community based clinics have already been held and that 294,000 children have been immunized. Others are now being planned and funds are available for at least 400,000 more doses of the vaccine. Dr. Gillespie went on to point out that the State Health Department cannot provide direct financial assistance to other groups but can and does cooperate with local medical societies in providing vaccine.

The State Department of Health will endorse and cooperate with any mass clinic which has the approval of a local medical society. It was further brought out that children in the age group of 1-12 years should be vaccinated as soon as possible.

It was then moved by Dr. Moss that the Statewide mass immunization program of the Department of Health, as explained by Dr. Gillespie, be endorsed. *The motion was seconded and adopted.*

Financial Report and Budget

Dr. Michael A. Puzak, Chairman of the Finance Committee, reported on the Society's finances and presented a proposed budget for fiscal 1970-71. The budget was approved as presented and referred to the House of Delegates for consideration later in the day.

It was learned that the Society had enjoyed a very good year financially—due largely to the dues increase authorized in October, 1969. Council reacted favorably to the proposal that Alternate Delegates attend meetings of AMA at the Society's expense.

VaMPAC

It is the responsibility of Council to elect a Board of Directors for the Virginia Medical Political Action Committee. *A motion to elect the following nominees was seconded and adopted:*

District Chairmen

1st: William B. Brown, M.D., Gloucester
2nd: Fred T. Givens, Jr., M.D., Norfolk
3rd: Henry S. Spencer, M.D., Richmond
4th: A. Epes Harris, Jr., M.D., Blackstone
5th: Girard V. Thompson, Sr., M.D., Chatham
6th: Charles A. Young, Jr., M.D., Roanoke
7th: Dennis P. McCarty, M.D., Front Royal
8th: Ira Godwin, M.D., Fairfax
9th: Giles J. Gilmer, M.D., Lebanon
10th: Michael A. Puzak, M.D., Arlington

Members-At-Large

1st: Richard F. Clark, M.D., Hampton
2nd: Arthur A. Kirk, M.D., Portsmouth
4th: Robert B. Webb, Jr., M.D., Petersburg
5th: Thomas H. Holland, Pharmacist, Danville
5th: Mrs. Robert D. Keeling, South Hill
6th: Mrs. F. Clyde Bedsaul, Floyd
6th: Alexander McCausland, M.D., Roanoke
8th: Alvin E. Conner, M.D., Manassas
9th: Cecil C. Hatfield, M.D., Saltville
10th: Joseph M. Kline, D.D.S., Arlington

Peer Review

Legislation now before the Congress would seem to indicate that state medical societies will soon be called upon to establish peer review programs to be used in connection with Medicaid, national health insurance, etc. An idea of what we might expect can be found in the so-called Bennett Amendment to H.R. 17550 which provides for the designated review organization to approve in advance all elective admissions to hospitals and nursing homes and "after the fact" review of emergency admissions.

Dr. James Kenley stated that Virginia's Medicaid program has reached the point where it needs assistance from physicians—particularly in the areas of guidance and decision making. It was brought out that a peer review organization operating at the state level could be used to good advantage at the present time.

During the ensuing discussion it was suggested that the responsibility for making any peer review procedure work effectively might well fall to individual members of Council.

Dr. Carmines then moved that a special committee be appointed to study the peer review problem in depth and make recommendations concerning guidelines and how the Society might best prepare itself to meet its responsibility. The motion also provided that the committee would coordinate its efforts with those of the State Department of Health. *The motion was seconded and adopted.*

Woman's Auxiliary

Council was advised that the Woman's Auxiliary has apparently run into additional expense in connection with its 1970 annual meeting. Consequently, it is requesting an additional appropriation of $100 to help meet its financial obligations.

A motion by Dr. Stark to approve the special appropriation of $100 was seconded and carried.

Life Membership

The advisability of making some form of life membership available to members of The Medical Society of Virginia was discussed. It was pointed out that the Southern Medical Association is now doing this and apparently meeting with considerable success. Life dues are paid in one sum according to the age of the member.

A motion was introduced which would refer the matter of life membership to both the Membership Committee and the Committee Studying the Future Mission of the Society. *The motion was seconded and carried.*

Conference on Continuing Education

Dr. Moss reported that a Conference on Continuing Education had tentatively been scheduled for Sunday, November 22, in Williamsburg. Its purpose is to explore continuing education in Virginia and determine just where the stress should be placed and how best to obtain maximum results. Dr. Moss pointed out that the Virginia Regional Medical Program hopes to obtain a grant to be used in improving continuing education in the State and the Conference would help demonstrate the need for such a program and the desire of Virginia physicians to cooperate and participate.

The Conference would be jointly sponsored by the Society and the Virginia Regional Medical Program and would be held in the afternoon. November 22 seemed quite appropriate since a Regional meeting of the American College of Physicians would conclude at noon on that date. This would undoubtedly provide a boost as far as attendance is concerned.

A motion by Dr. Brown to endorse the Conference was seconded and adopted.

Physicians and the General Assembly

Several state societies have enjoyed considerable success in arranging for physicians to be on duty while their state legislatures are in session. These have been designated "Physician of the Day" programs and apparently have been well received by legislators. Florida has enjoyed unusual success with its program.

It was learned that physicians serve on a voluntary basis and come from all over the state. While at the Capital they treat legislators who might become ill and are also available for advice, etc. should the need arise.

A motion was then offered which have the House of Delegates authorize the President to appoint a special committee for the purpose of developing and implementing a "Physician of the Day" program. *The motion was seconded and carried.*

Insurance Committee

A special meeting of the Insurance Committee was held on Saturday, October 10, for the purpose of reviewing the Society's disability programs. It was determined that the Society should continue with both its basic and supplemental disability programs—

each of which has been well received over the years. Having the two programs makes it possible for Society members to obtain more coverage than would be possible under the basic plan alone.

Committee Structure

Dr. Moss and Dr. Hagood both expressed the thought that, should the new Committee structure be adopted, a great deal more continuity and follow-through would be possible if Section Chairmen were appointed from among members of Council. While Dr. Moss would include Society officers in the "eligible" category, Dr. Hagood believed that the Chairmen should be selected only from among the District Councilors.

Following considerable discussion there was introduced a motion which would amend the report of the Judicial Committee in such manner as to have Section Chairmen appointed from among the District Councilors and elective officers. *The motion was seconded but was not adopted.*

Travel Program for 1971

Dr. Moss reported that the Executive Committee had met to review the various proposals for a 1971 travel program and had decided that the proposal of International Travel Advisors should be accepted. This means that the Society will sponsor a second trip to the Orient in late spring or early summer, and a cruise to various Mediterranean ports in September.

Brought out was the fact that International Travel Advisors (INTRAV) had handled all arrangements for the Society's first "Orient Adventure" and had done a superlative job.

Virginia Medical Monthly

Dr. McCarty stated that the suggestion that the Virginia Medical Monthly be sent all physicians in the State, regardless of membership, deserved a great deal of consideration. It was requested that the Executive Secretary look into the matter of cost and any other factors which might be involved.

State Constitution

Dr. Hagood presented a statement concerning Council's action on September 20 in support of the proposed amendments to the State Constitution. He stated that he had given a great amount of consideration to the four specific proposals and that he could accept number 1, 3 and 4.

Proposal #2, however, had to do with lotteries and Dr. Hagood offered the opinion that it could not in any way be construed as contributing to the progress of medicine in Virginia. The thought was expressed that physicians might well be placed in a position of embarrassment by their support of this particular proposal.

Council was then requested to rescind its action of September 20 and instead endorse proposals 1, 3 and 4 of the proposed amendments to the State Constitution. A motion to this effect by Dr. McCarty was seconded.

Dr. Liddle then moved to amend Dr. McCarty's motion by expressing opposition to proposal #2. The motion to amend was lost.

Dr. McCarty's motion was then adopted.

Sesquicentennial Celebration

Dr. Warthen advised Council that the exhibit commemorating the 150th Anniversary of The Medical Society of Virginia and Richmond Academy of Medicine had been completed and was in place in the registration area. Unfortunately, fire regulations prevented Dr. Warthen's committee from placing the exhibit in the location originally selected. Fortunately, another excellent location was available—enabling the exhibit to be displayed to advantage.

There being no further business, the meeting was adjourned.

ROBERT I. HOWARD, *Secretary*

APPROVED:
WILLIAM GROSSMANN, M.D., *President*

Minutes of the House of Delegates

FIRST SESSION

The House of Delegates of The Medical Society of Virginia met in the Roof Garden of Richmond's Hotel John Marshall on Sunday, October 11, 1970. The meeting was called to order at 2:00 P.M. by Dr. William Grossmann, President.

The invocation was delivered by Dr. Bernard H. Kasinoff, Chairman, Committee on Medicine and Religion.

The National Anthem was sung by Mr. James L. Moore, Jr., member of the State office staff.

Dr. Grossmann then introduced Dr. Thomas S. Edwards, Speaker of the House, who in turn called for a report from the Credentials Committee. Dr. James P. Charlton, Chairman, reported a quorum present.

The minutes of the October, 1969, sessions of the House were approved as published in the December, 1969, issue of the Virginia Medical Monthly.

Dr. Grossmann then delivered his Presidential Address. The complete address is published in the December issue of the Virginia Medical Monthly and it is hoped that all members will read it carefully. Dr. Grossmann has done an excellent job in pointing out those areas of greatest concern for all physicians and providing a blueprint for future action by the profession.

Dr. William J. Hagood, Jr., Vice-Speaker, introduced Mrs. Joseph M. Straughan, President of the Woman's Auxiliary to The Medical Society of Virginia. Mrs. Straughan presented an impressive report of Auxiliary activity during the year. Of particular interest was the work of the Alexandria Auxiliary in composing and distributing source material and text books on drug abuse. These books have been made available to all schools in the Alexandria area and have won the praise of all who have seen them.

Also recognized was Mrs. Reuben F. Simms, President-Elect of the Auxiliary.

Introduced next was Mrs. Wilson P. Smith of Huntington, West Virginia. Mrs. Smith is the Eastern Regional Chairman for AMA-ERF and discussed efforts of the Auxiliary to obtain maximum support for that most worthy program. Auxiliaries over the Nation have accepted AMA-ERF as their own program and have been extremely effective in obtaining the financial support so vital to the continued success of the Foundation.

The following delegates from allied organizations were then recognized: Mr. Thomas Holland, Danville, Virginia Pharmaceutical Association; Dr. Carlton E. Gregory, Arlington, Virginia State Dental Association; Mrs. Marguerite Mueller, Virginia Nurses' Association; Mrs. Jean Pair, Jarrett, Virginia Association of Medical Assistants; and Mr. John F. Harlan, Jr., Charlottesville, President, Virginia Hospital Association.

Dr. Hagood next introduced Mr. Dwight Wooster, President of the Mulholland Society of the University of Virginia School of Medicine. Mr. Wooster discussed current activities and projects of his Society and stated that an effort is being made to expose students to projects related to the delivery of medical care. The Mulholland Society has retained its interest in the drug abuse problem and is, in fact, broadening the scope of its program.

Mr. Joseph L. Wood, President of the Medical College of Virginia Chapter of the Student American Medical Association, also addressed the House and stated that medical students are changing—in keeping with our changing times. Students are better informed politically than ever before and are becoming more and more aware of the many social problems besetting the profession on every hand. The medical student of today stands ready to go where his services are needed. The Appalachian Summer Program was cited as an example.

Next to be introduced were Dr. Harry S. Weeks of Wheeling, West Virginia, President-Elect of the West Virginia State Medical Association, and Dr. R. C. Ellison, Sr., President of the Old Dominion Medical Society.

The House then heard Dr. Kinloch Nelson, Dean, School of Medicine, Medical College of Virginia. Dr. Nelson reported on current activities at the College and stated that definite improvement had been made in student selection procedures. He went on to discuss recent innovations in medical education and stated that the senior year is now almost entirely elective. This change is proving quite popular and apparently quite effective. Dr. Nelson commended the Program Committee for arranging a Seminar on the Delivery and Financing of Medical Care and expressed the hope that it would be well attended.

Dr. Kenneth R. Crispell, Dean, University of Virginia School of Medicine, also addressed the House and stated that medical schools are busy seeking new methods and answers to today's problems. He indicated that a number of programs at the University were being reorganized and that considerable attention was being given to the matter of delivering medical care. Ways and means of solving the "Family Practice" problem are being carefully considered and effective methods of providing ambulatory health care are well up on the priority list. The University is also seeking and studying new criteria for the admission of students to medical school.

The Speaker then appointed Chairmen from the Congressional Districts and requested that they meet with their respective delegations and elect members to serve on the Nominating and Reference Committees. He requested the 3rd and 4th Districts to submit three nominations for appointment to the State Board of Medical Examiners, and reminded the 2nd, 4th, 6th, 8th and 10th Districts that nominees for Council should be selected.

There followed an intermission during which delegates from the various Districts met in caucus. Upon resumption of business, the House turned its attention to the Rules of Procedure which would

govern the session from that point on. No amendments were proposed and the Rules were adopted as presented.

Dr. Michael A. Puzak, Chairman of the Finance Committee, reported that the Society had enjoyed a very good year financially and presented a proposed budget for fiscal 1970-71. The budget was referred to the appropriate Reference Committee for consideration the following afternoon.

Also referred to Reference Committee was a Supplemental Report of Council covering two actions taken earlier in the day.

The various Committee reports were then received and referred to Reference Committees. Committee Chairmen were provided an opportunity to submit supplemental reports should they wish.

Dr. Thomas W. Murrell, Jr., Chairman of the Committee on Comprehensive Health Planning, brought the House up-to-date on the health services and manpower survey being conducted by The Medical Society of Virginia. A special survey team working under the supervision of a physician survey committee has been hard at work since March and has completed the task of compiling a complete library of source material. A questionnaire is being developed and will soon be distributed to physicians over the State. The questionnaire will be supplemented by personal interviews. Dr. Murrell stated that the survey will undoubtedly develop some extremely interesting and useful information with reference to physicians' assistants.

Dr. W. Leonard Weyl, Chairman of a special committee studying problems connected with Medicaid billing, referred the House to minutes of the December 10, 1969, meeting of Council. He stated that his committee's three recommendations concerning coding, interval billing and freedom of choice in billing were reported in detail.

There followed the introduction of new business and attention was called to three resolutions distributed to members of the House prior to the meeting. A resolution sponsored by the Fourth District Medical Society called for support of the nursing profession and its educational program, and a resolution from the Southwestern Virginia Medical Society expressed displeasure with current regulations being imposed by Medicare carriers under HEW guidelines where fees are concerned. A third resolution was sponsored by the Albemarle County Medical Society and called for the endorsement of the team care concept under certain specific conditions.

Dr. Alexander McCausland then obtained consent for immediate consideration of the following resolution which was adopted unanimously:

RESOLVED: That Dr. Kenneth Cooper, Lynchburg, Virginia, be nominated to receive the award of the President's Committee for the Physically Handicapped and the Governor's Award Committee as the doctor doing the most toward the employment of the physically handicapped in Virginia.

Dr. Raymond Brown also requested suspension of the Rules in order that immediate consideration could be given the following resolution:

WHEREAS, W. Callier Salley, M.D., did for many years give unselfishly of his time and talents as Speaker of the House, and

WHEREAS, Dr. Salley served The Medical Society of Virginia with distinction in this capacity, therefore be it

RESOLVED, that The Medical Society of Virginia recognize this very considerable contribution by awarding Dr. Salley a Certificate for Distinguished Service.

The resolution was adopted unanimously.

A resolution was introduced by Dr. Baxter Byerly calling for The Medical Society of Virginia to reaffirm its support of the basic Regional Medical Program concept of improved patient care through voluntary cooperative arrangements linking patient care with health research and education by means of coordinated programs to reduce morbidity and mortality in heart disease, cancer, stroke and related diseases.

Dr. Byerly also introduced a resolution requesting the House to oppose the repeal or dilution of any state or national antisubstitution laws or regulations governing the filling of medical prescriptions by pharmacists.

A third resolution by Dr. Byerly, introduced on behalf of the Danville-Pittsylvania Academy of Medicine, would instruct officers of The Medical Society of Virginia to refrain from entering into any contract having to do with peer review as set forth in the Bennett Amendment.

Dr. Charles A. Young, Jr., then introduced a resolution which would instruct the Legislative Committee to support appropriate laws requiring the use of roll bars on newly purchased tractors in Virginia. Virginia's delegates to the American Medical Association would be requested to take similar action with reference to Federal legislation.

Next to be introduced was a resolution calling

for the Society to endorse the stand of the American Medical Association in opposition to compulsory generic prescribing. The resolution was offered by Dr. Charles A. Young, Jr.

A third resolution by Dr. Young would place The Medical Society of Virginia on record in opposition to the Bennett Amendment and enjoin its officers from entering into any peer review contract with HEW, etc.

Dr. J. B. Hutt, Jr., followed with a resolution which would have the Society assert its opposition to peer review and decline to aid in its implementation.

The Speaker requested that members of the Committee on Nominations meet with him immediately following adjournment in order that a time and place for its meeting could be designated.

Dr. Edwards called attention to meetings of the Reference Committees on Monday at 3:00 P.M. and announced that the Second Session of the House would be held in the Roof Garden on Tuesday, October 13, at 3:30 P.M.

There being no further business, the meeting was adjourned.

Second Session

The second session of the House of Delegates was called to order by Dr. Thomas S. Edwards, Speaker, at 3:30 P.M. on Tuesday, October 13, 1970, at Richmond's Hotel John Marshall. Dr. James P. Charlton, Chairman of the Credentials Committee, reported a quorum.

Dr. George S. Hurt was then requested to present the report of the Committee on Nominations. The following nominees were elected:

President-Elect: Dr. William S. Hotchkiss
1st Vice-President: Dr. William D. Liddle, Jr.
2nd Vice-President: Dr. Harold I. Nemuth
3rd Vice-President: Dr. Anthony J. Munoz
Speaker: Dr. Thomas S. Edwards
Vice-Speaker: Dr. William J. Hagood, Jr.
Executive Secretary-Treasurer:
Robert I. Howard

Nominees for Council were considered and the following were elected:

2nd District: Dr. Arthur A. Kirk
4th District: Dr. George J. Carroll
6th District: Dr. John A. Martin
8th District: Dr. Alvin E. Conner
10th District: Dr. Thomas L. Lucas

The following nominations for the State Board of Medical Examiners were received and will be submitted to the Governor for consideration:

3rd District: Dr. Earnest B. Carpenter
Dr. William S. Johns
Dr. James O. Burke
4th District: Dr. George J. Carroll
Dr. Anthony J. Munoz
Dr. James S. Harris

The House was advised that the term of Dr. W. Callier Salley, Delegate to the American Medical Association, would expire on December 31 and that nominations were in order.

The names of Dr. Salley and Dr. Thomas S. Edwards were placed in nomination and Dr. Salley was re-elected.

Nominations were then received for Alternate Delegate to succeed Dr. Richard E. Palmer. Dr. Palmer was recently elected to the Board of Trustees of the American Medical Association and, consequently, did not stand for re-election. The names of Dr. Michael A. Puzak and Dr. William R. Hill were placed in nomination and Dr. Hill elected.

Dr. Russell B. Roth, Speaker, House of Delegates, American Medical Association, was introduced. Dr. Roth stated that medical meetings are taking on a new importance and medical organizations must stand together as never before. It is extremely important that medicine take a firm and sound position on pressing issues of the day and make sure that it presents a united front. Dr. Roth emphasized the importance of all physicians taking seriously the many problems connected with the delivery of medical care.

Dr. Grossmann was then introduced for the purpose of presenting a Certificate of Distinguished Service to Dr. Salley. Dr. Salley was honored for the many contributions he had made as Speaker of the House.

Dr. Hagood was then requested to present the report of Reference Committee No. 1.

REFERENCE COMMITTEE No. 1

Judicial Committee Report (Amendments to Constitution and By-Laws):

It was the recommendation of the Reference Committee that that portion of the Judicial Committee report having to do with student membership be adopted (Pages 593-596 of the September, 1970 issue of the Virginia Medical Monthly). The Judicial Committee had proposed a series of amendments to the Constitution and By-Laws designed to make it

possible for second, third and fourth year medical students to form component medical societies at the Medical College of Virginia and University of Virginia School of Medicine. This, in turn, would enable them to obtain active membership in The Medical Society of Virginia with representation in the House of Delegates.

A motion to adopt the proposed amendments as recommended by the Reference Committee carried.

The House also reacted favorably to a recommendation that component medical societies do everything possible to assist physicians serving internships and residencies in approved hospitals to become active members. This would do much to eliminate the time lag which now occurs between the physician's graduation and his association with local and state medical societies.

In consideration of nineteen proposed amendments to the Constitution and By-Laws which would revise the Society's Committee structure, the Reference Committee suggested but one change (proposed amendments published in September, 1970 issue of Virginia Medical Monthly, pages 594-597). It recommended that paragraph (2) of that portion of the report having to do with Sections and Committees be amended to read as follows:

> "(2) The President shall appoint Section Chairmen annually from the Council members elected from the Congressional Districts and the elected officers. Section Chairmen shall be responsible for the operation of the committees within his section and shall report directly to the Council."

A motion to adopt the Reference Committee's recommendation carried.

A follow-up motion to adopt the other proposed amendments revising the Society's Committee structure was also carried.

The House then concurred with the Reference Committee that the report of the Judicial Committee be amended in such manner as to have Article VI of the Constitution read as follows:

> "The Council shall have charge of the affairs of the Society when the House of Delegates is not in session. The Council shall consist of one member from each Congressional District of the State, together with the President, President-Elect, First Vice-President, the Immediate Past President, the Speaker, or, in his absence, the Vice-Speaker of the House of Delegates. The Editor and the State Health Commissioner shall be ex-officio members without vote."

State Constitutional Amendments:

This final item considered by the Reference Committee had to do with a Supplemental Report of Council which endorsed proposals 1, 3 and 4 of the proposed revision of the State Constitution. (Council earlier had voted to support all four proposals but then rescinded its action.)

The Reference Committee, after giving the matter very careful consideration, recommended that the Supplemental Report of Council not be adopted because it was not considered germane to the purposes of the Society as stated in Article II of the Constitution. *A motion to adopt the Committee's recommendation was lost.*

The report of Reference Committee No. 1 was then adopted as amended.

Dr. Dennis P. McCarty was then introduced for the purpose of presenting the report of Reference Committee No. 2.

REFERENCE COMMITTEE No. 2

Committee Reports:

The following reports were adopted as recommended by the Committee: Executive Secretary-Treasurer (with commendation to Mr. Howard and his staff), AMA Delegates, Legislative, Ethics, Blue Shield Directors, Advisory to the Woman's Auxiliary, Insurance Review, Grievance, Insurance, Liaison to the State Bar, National Legislation, and Pharmacy.

The House concurred with the Committee's recommendation that the majority of the report of the Liaison Committee to the Virginia Podiatry Society be accepted with the recommendation that further and better communication be developed. It further stated that Section 4 pertaining to hospital privileges should be more clearly defined and referred to the Liaison Committee to the Virginia Hospital Association.

Report of Council:

In its consideration of that portion of the report having to do with a Five Digit Code, the Reference Committee recommended that the last "Resolved" of the resolution adopted by Council be amended to read as follows:

> "Resolved, that The Medical Society of Virginia urge Blue Shield *in* Virginia to adopt at its earliest convenience the AMA system of coding and nomenclature as the universal system for description of medical services."

The House voted to approve the Committee's recommendation.

Those items in the report having to do with specialty society President, national drug formulary, drug abuse, and Retirement Plan were approved.

The House likewise concurred with the Reference Committee's recommendation that the item on physicians' assistants be approved with a suggestion that the special committee appointed to work with the Board of Medical Examiners explore the possibility of using the terms "clinical associate" for one who holds a baccalaureate degree, and "clinical assistant" for one who does not have a baccalaureate degree. These terms would replace the designation of "physician's assistant".

Budget for Fiscal 1970-71:

It was the Committee's recommendation that the proposed budget for fiscal year 1970-71, in the amount of $194,360.00, be adopted. *The House concurred* and the budget follows in detail:

EXPENSES:

Salaries	$ 78,000.00
Telephone & Telegrams	1,800.00
Postage	2,000.00
Stationery and Supplies	2,500.00
Office Equipment—Repairs & Replacements	1,000.00
Building Maintenance & Repairs—net	12,300.00
Convention Expenses	1,000.00
Council and Committee Expense	2,500.00
Executive Assistant—Travel	300.00
Delegates to AMA	4,000.00
President's Expense	3,000.00
Travel Expense—Executive Secretary	1,450.00
Virginia Medical Monthly	39,000.00
Legal Expense	4,000.00
Walter Reed Commission	500.00
Woman's Auxiliary	100.00
Membership Dues (Affiliated Organizations)	610.00
Editor—Virginia Medical Monthly	1,000.00
VaMPAC (Educational Fund)	12,000.00
News and Views	250.00
Retirement Fund	9,500.00
Social Security Taxes	2,000.00
Unemployment Compensation	100.00
Public Relations	3,000.00
Miscellaneous	500.00

Special Appropriations:

Virginia Council	$ 5,000.00
AMA-ERF	1,000.00
Rural Health	500.00
Scholarship—MCV—(Administered by The Medical Society of Virginia)	2,000.00
Scholarship—UVA School of Medicine—(Administered by The Medical Society of Virginia)	2,000.00
Student AMA	$ 500.00
National Society for Medical Research	150.00
Miscellaneous AMA	800.00
TOTAL BUDGET	$194,360.00

Resolution on Team Care Concept:

(Administered by The Medical Society

Dr. McCarty reported that the Committee had given very careful consideration to this resolution sponsored by the Albemarle County Medical Society and believed that the implications were such that further study and structuring seem indicated. Consequently, it was the Committee's recommendation that the resolution be referred back to the Albemarle County Medical Society for that purpose. It was further reported that proponents of the resolution had no objection to such action. *The Committee's recommendation was approved.*

Resolution on Medicare Fees:

(Southwestern Virginia Medical Society)

It was the recommendation of the Committee that this resolution not be adopted. This action was taken primarily because of the last "Resolved" which requested that "a committee be appointed to aid in the establishment of all fees within the State." The Reference Committee believed that this language might be construed as pertaining to the fixing of fees. After rejecting a motion which would strike the word "establishment" and insert instead the word "review", *the House approved the Committee's recommendation that the resolution not be adopted.*

Resolutions on Antisubstitution:

(Halifax County Medical Society and
Roanoke Academy of Medicine)

After careful consideration of two resolutions having to do with antisubstitution, the Committee recommended that the following substitute resolution be adopted.

WHEREAS, it has been the established policy of the American Medical Association and the great majority of its component societies to oppose compulsory generic prescribing; and

WHEREAS, the 1970 session of the House of Delegates of the American Pharmaceutical Association called for the repeal of all state laws forbidding substitution in the filling of prescriptions; and

WHEREAS, it has been shown repeatedly the "generic equivalents" frequently do not produce

equal therapeutic actions or result in a saving to the patient; and

WHEREAS, this action of the American Pharmaceutical Association would, if effected, be contrary to the public interest by taking from the physician his right and duty to be primarily responsible for the medication prescribed for and received by his patient; therefore, be it

RESOLVED, that the House of Delegates of The Medical Society of Virginia oppose the repeal or dilution of any state or national antisubstitution laws or regulations governing the filling of the physician's medical prescription by a pharmacist; and, be it further

RESOLVED, that a copy of this resolution be sent to the American Medical Association, national pharmaceutical associations, and the Virginia Pharmaceutical Association.

The House concurred with the Committee's recommendation for adoption.

Dr. Arthur A. Kirk was then requested to present the report of Reference Committee No. 3.

REFERENCE COMMITTEE No. 3

Committee Reports:

The following reports were adopted as recommended by the Committee: Membership, Publication, Public Relations, Air Pollution, Mental Health, Alcoholism, Venereal Disease Control, Rehabilitation, Medical Education, Heart-Cancer-Stroke, Maternal Health, and Advisory to Virginia Hospital Association.

During consideration of the report of the Committee on Nursing it was learned that the word "financially" had been omitted in one of the motions contained therein. *The House reacted favorably* to the recommendation that the omitted word be inserted and that the report be adopted with the motion in question to read as follows:

"That a planning committee for such meetings be appointed. The committee would consist of representatives of The Medical Society of Virginia, Virginia Nurses' Association, Virginia Hospital Association, Virginia League of Nurses, and other appropriate bodies, and would recommend component districts in which meetings could be held. It would also assist *financially* in making the necessary arrangements."

The House concurred with a recommendation for approval of those items in the Report of Council having to do with D. C. medical schools, disadvantaged students, a third medical school for Virginia, rubella, Stuart Medical Society, and communications.

Supplemental Report of Council:

Upon the recommendation of the Committee, *the House voted to approve* that portion of the Supplemental Report of Council having to do with the appointment of a special committee to develop and implement a "Physician of the Day" program for the General Assembly.

Child Health:

The House agreed with a recommendation that the portion of the report of the Committee on Child Health having to do with the ages of children needing immediate immunization for rubella should list the ages as 1 to *12* rather than 1 to 9.

Resolution on Nursing and Nurse Education:

(Fourth District Medical Society)

It was the Committee's recommendation that the first "Resolved" of the resolution on nursing be amended by substituting the word "including" for the word "especially". *The House concurred and the resolution now reads as follows:*

WHEREAS, the nursing profession is so closely allied with the medical profession and good nursing care is essential in caring for patients; and

WHEREAS, there is great diversity in the education of nurses and although the degree of four-year nursing schools may prepare better teachers or administrators, it is the feeling of The Medical Society of Virginia that the three-year nursing schools produce excellent nurses that form the backbone of nursing care throughout the State; therefore, be it

RESOLVED, that The Medical Society of Virginia support the nursing profession and its educational program, *including* the three-year schools; and, be it further

RESOLVED, that a copy of this resolution be sent to the Virginia Nurses' Association.

Resolution on Regional Medical Program:

(Introduced by Dr. Baxter H. Byerly)

In accordance with the Committee's recommendation, *the House adopted the following resolution:*

WHEREAS, the overall goal of the Regional Medical Program is improved patient care through continuous upgrading of the knowledge and skills

of physicians, dentists, nurses, and allied health professionals so that the latest and best in modern medical care for heart disease, cancer, stroke, and related diseases is available to all the people of the United States of America; and

WHEREAS, the objective of improved patient care is to be achieved by establishing voluntary cooperative arrangements among the medical schools and/or medical centers with the practicing physicians, dentists, nurses, and allied health professionals, primarily through programs of continuing education; and

WHEREAS, the mechanism of cooperative arrangements and the essence of the Regional Medical Program concept is the linkage of patient care with health research and education involving the full array of available health resources and personnel on a nationwide basis to provide a mutually beneficial interaction; and

WHEREAS, the realization of the above goals will be achieved by project activities and other efforts which, when taken together, constitute coordinated programs to reduce morbidity and mortality in each of the categorical disease areas; and

WHEREAS, the coordinated programs in turn represent the overall purpose of the Regional Medical Program; and

WHEREAS, the Virginia Regional Medical Program is accomplishing these goals; therefore, be it

RESOLVED, that The Medical Society of Virginia reaffirms its acceptance and support of the basic Regional Medical Program concept of improved patient care through voluntary cooperative arrangements linking patient care with health research and education by means of coordinated programs to reduce morbidity and mortality in heart disease, cancer, stroke and related diseases.

Resolution on Tractor Roll Bars:

(Introduced by Dr. Charles A. Young, Jr.)

This particular resolution received very careful consideration and it was the Committee's recommendation that both "Resolved" portions be amended to include "seat belts" and provide for the initiation of appropriate laws. *The amended resolution, as adopted by the House, reads as follows:*

WHEREAS, each year more than 1,000 persons in the United States are killed in farm tractor upset accidents and an additional 5,000 are seriously injured; and

WHEREAS, tractor roll bars have proven effective in preventing a high percentage of deaths and injuries; therefore, be it

RESOLVED, that The Medical Society of Virginia instruct the Legislative Committee to initiate appropriate laws requiring the use of roll bars and seat belts on newly purchased tractors in Virginia; and be it further

RESOLVED, that Virginia's delegates to the American Medical Association take similar action at the next meeting of the AMA House of Delegates requesting initiation of Federal laws requiring the use of tractor roll bars and seat belts.

Peer Review:

The Committee considered three resolutions having to do with peer review. Two of these resolutions, one sponsored by the Danville-Pittsylvania Academy of Medicine and the other introduced by Dr. Charles A. Young, Jr., specifically referred to the Bennett Amendment. The other was a resolution introduced by Dr. J. B. Hutt, Jr. All three resolutions were similar is that they either expressed opposition to entering into any peer review contract with HEW and other third parties, or aiding the implementation of peer review in any way.

The Committee believed that, under the circumstances, a substitute resolution should be presented. There was a great deal of discussion concerning the substitute, particularly by those who felt it would not sufficiently enjoin officers of the Society from entering into an agreement with HEW or other third parties. An effort to obtain favorable consideration of a second substitute motion proved unsuccessful.

The House then voted to accept the Committee's recommendation that the following substitute resolution be adopted:

WHEREAS, The Medical Society of Virginia believes that by strengthening and enlarging the existing Committee structure of The Medical Society of Virginia and component medical societies, as well as related hospital staff committees, an effective method of peer review can be accomplished and the mechanism of initiating review broadened, and

WHEREAS, The Medical Society of Virginia does not believe that another peer review structure is necessary to accomplish such review as outlined in the Bennett Amendment; therefore, be it

RESOLVED, that The Medical Society of Virginia is opposed to the Bennett Amendment (No. 851 to H.R. 17500).

The Speaker then recognized Dr. C. Newton Van

Horn who moved reconsideration of Council's action supporting proposals 1, 3 and 4 of the revised State Constitution. *His motion was seconded but failed to carry.*

Dr. John E. Prominski requested the privilege of introducing a motion with the common consent of the House. *Permission was granted and the following resolution adopted:*

RESOLVED, that this body express to the Committee on Arrangements of the Richmond Academy of Medicine and the Program Committee of The Medical Society of Virginia its sincere appreciation for a very fine Annual Meeting; and, be it further

RESOLVED, that the management and staff of The John Marshall Hotel be thanked for their roles in helping make this meeting a most memorable one.

Dr. James M. Moss, who had been installed as President during the banquet on Monday night, October 12, then presented Dr. Grossmann with a Certificate of Appreciation and the Presidential Gavel.

There being no further business, Dr. Edwards declared the meeting adjourned.

ROBERT I. HOWARD, *Secretary*

APPROVED:
THOMAS S. EDWARDS, M.D., *Speaker*

GENERAL SESSION

A general session of The Medical Society of Virginia was held at The John Marshall Hotel, Richmond, on Wednesday, October 14, 1970. The session was called to order by Dr. James M. Moss, President, at 10:40 A.M.

The amendments to the Constitution and By-Laws which had been adopted by the House on Tuesday, October 13, were then ratified. These amendments provided for student component medical societies, a revised Committee structure, and certain changes in the membership of Council.

There being no further business, the general session was declared adjourned.

ROBERT I. HOWARD, *Secretary*

APPROVED:
JAMES M. MOSS, M.D., *President*

50-Year Club Members—1970

Powell Garland Dillard, M.D., Lynchburg
James Frederic Edmonds, M.D., Accomac
Richard Williamson Fowlkes, M.D., Richmond
James Noah Greear, Jr., M.D., Reno, Nevada
William Thomas Green, Jr., M.D., Nassawadox
Carlton Alfred Michael, M.D., Blacksburg
Thomas Edgar Oast, M.D., Portsmouth
John William Shawver, M.D., Tazewell

Members Whose Deaths Have Been Reported Since 1969 Annual Meeting

John Quincy Adams, M.D.
Otis Taylor Amory, M.D.
Samuel Armistead Anderson, Jr., M.D.
Wilbur Allen Barker, M.D.
Edgar Allen Bocock, M.D.
William Nicholas Botts, M.D.
Marshall Levis Boyle, M.D.
Rhodric Winfield Browne, M.D.
Gordon Gayton Carmichael, M.D.
Samuel Beverly Cary, M.D.
Edward Sidney Carr, M.D.
Joseph Dingus Culbertson, M.D.
Paul Davis, M.D.
Peter Alexander Delmonico, M.D.
Samuel Clinton Draper, M.D.
John Morehead Emmett, M.D.
Edward Watts Gamble III, M.D.
William Miller Gammon, M.D.
James Raymond Gorman, M.D.
Campbell Harris, M.D.
Guy Ross Harrison, D.D.S.
William Carey Henderson, M.D.
Raymond Cottrell Hooker, M.D.
Louis Aloysius Houff, M.D.
David Wright Kelly, Jr., M.D.
Carl Scott Lingamfelter, Jr., M.D.
Charles Hamilton Lupton, M.D.
William Haney Matthews, M.D.
Robert Matthews, M.D.
J. Rollins McGriff, M.D.
Hunter Holmes McGuire, M.D.
Vincent Jerome Meads, M.D.
Robert Lucas Ozlin, M.D.
William Henry Parker, M.D.
Joseph Edward Pisano, M.D.
James Henry Roberts, M.D.
Augustine Joseph Russo, M.D.
Clement E. Schotland, M.D.
Henry Bernard Showalter, M.D.
George Washington Skaggs, M.D.
Luther Randolph Stinson, M.D.
William Durwood Suggs, M.D.
Allen Clifford Thomas, M.D.
Martillus Hollis Todd, M.D.
Cuthbert Tunstall, M.D.
Thomas Uriah Vermillion, M.D.
Charles Edward Watson, M.D.
William Lawrence Weaver, M.D.
George A. Welchons, M.D.
Charles Stanley White, M.D.

Auditor's Report

OFFICERS AND COUNCILORS
THE MEDICAL SOCIETY OF VIRGINIA
4205 DOVER ROAD
RICHMOND, VIRGINIA

GENTLEMEN:

We have examined the financial statements of The Medical Society of Virginia, Richmond, Virginia, for the year ended September 30, 1970, as listed in the foregoing table of contents. With the exceptions noted in the immediately following paragraph, our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The accounts receivable and accounts payable were not verified by direct confirmation; however, the amounts are not material in relation to the financial position as a whole.

It is our opinion that the Balance Sheet presents fairly the financial position of the Society at September 30, 1970, in accordance with generally accepted principles of accounting. The Statement of Income and Expenses is prepared on the basis of cash receipts and disbursements.

Yours very truly,

MITCHELL, WIGGINS & COMPANY
By CHARLES W. ANDERSON
Certified Public Accountant

BALANCE SHEET
September 30, 1970

ASSETS

GENERAL FUND		
Cash in banks		$211,388.64
Accounts receivable:		
Dues from members—Estimated collectible value—1969 dues—100 @ $60.00	$6,000.00	
Advertising—Virginia Medical Monthly	1,395.79	7,395.79
		$218,784.43
BUILDING FUND		
Land and buildings—At cost		$111,073.67
Furniture and equipment:		
Estimated value—October 1, 1950	$5,353.11	
Cost of acquisitions after October 1, 1950	7,701.30	13,054.41
		$124,128.08

LIABILITIES AND SURPLUS

GENERAL FUND		
Accounts payable:		
Preparation of medical journal—September, 1970		$ 3,606.18
Surplus:		
Available for appropriation:		
Balance—September 30, 1970		215,178.25
		$218,784.43
BUILDING FUND		
Surplus invested in tangible property		$124,128.08
		$124,128.08

STATEMENT OF SURPLUS
For the fiscal year ended September 30, 1970

GENERAL FUND		
Balance—October 1, 1969		$168,097.97
Add:		
Excess of income over expenses	$43,429.64	
Increase in accounts receivable	3,929.27	47,359.61
TOTAL		$215,457.58
Deduct:		
Increase in accounts payable		279.33
Balance—September 30, 1970		$215,178.25

STATEMENT OF INCOME AND EXPENSES

For the fiscal year ended September 30, 1970

INCOME

		Actual	*Budget*
Membership dues		$182,342.35	
Interest on investments		6,109.67	
History of Medicine in Virginia		4.00	
American Medical Association		1,268.38	
Virginia Medical Monthly:			
Advertising	$25,816.75		
Subscriptions—Nonmembers	858.90	26,675.65	
TOTAL		$216,400.05	

EXPENSES

Salaries		$ 57,342.50	$ 57,150.00
Telephone and telegrams		1,844.48	1,700.00
Postage		1,914.39	2,100.00
Office equipment—Repairs and replacements		1,695.41	975.00
Building maintenance and repairs—Net		9,590.30	9,000.00
Stationery and supplies		2,859.80	2,200.00
Convention expense		247.49	1,000.00
Council and committee expense		2,052.95	3,000.00
Executive assistant—Travel		498.29	475.00
Delegates to American Medical Association		1,870.89	2,000.00
President's expense		1,608.48	3,000.00
Travel expense		1,359.47	1,450.00
Preparation and distribution of medical journal		39,415.77	35,000.00
Legal expense		10,194.60	11,750.00
Walter Reed Commission		500.00	500.00
Woman's Auxiliary		127.56	100.00
Membership dues—Affiliated agencies		610.00	510.00
Editor—Virginia Medical Monthly		1,000.00	1,000.00
Special appropriations:			
Virginia Council Health and Medical Care		4,000.00	4,000.00
American Medical Education Foundation		1,000.00	1,000.00
Rural Health		500.00	500.00
Scholarship—Medical College of Virginia		2,000.00	2,000.00
Scholarship—University of Virginia		2,000.00	2,000.00
Student-American Medical Association		400.00	500.00
Other special appropriations		1,815.54	1,150.00
Virginia Medical Political Action Committee		12,000.00	12,000.00
News and Views		222.33	250.00
Employees' retirement fund		8,701.68	8,600.00
Payroll taxes		1,947.05	2,000.00
Miscellaneous		511.70	475.00
Public relations		3,139.73	3,000.00
TOTAL		$172,970.41	$170,385.00
EXCESS OF INCOME OVER EXPENSES		$ 43,429.64	

FINANCIAL CONDITION

The financial condition of the Society at September 30, 1970, is shown in the balance sheet on the accrual basis of accounting. A comparative summary of the financial condition at September 30, 1970, and the two preceding years is presented as follows:

Assets	September 30, 1970	1969	1968
Cash	$211,388.64	$167,959.00	$163,790.70
Accounts receivable	7,395.79	3,465.82	3,919.59
Land, buildings and equipment	124,128.08	124,128.08	125,128.08
Totals—All Funds	$342,912.51	$295,552.90	$292,838.37
Liabilities, Surplus and Fund Balance			
Liabilities:			
Accounts payable	$ 3,606.18	$ 3,326.85	$ 3,500.00
Surplus:			
General fund	215,178.25	168,097.97	164,210.29
Fund balance:			
Building fund	124,128.08	124,128.08	125,128.08
Totals—All Funds	$342,912.51	$295,552.90	$292,838.37

Cash—$211,388.64

Recorded cash receipts were accounted for by deposits in the banks and disbursements were supported by properly signed and endorsed cancelled checks. The balances on deposit at September 30, 1970, were verified by direct correspondence with the banks and examination of certificates and savings passbooks on hand as follows:

First and Merchants National Bank—Checking account	$ 88,798.58
Bank of Virginia—Savings account	12,447.57
Southern Bank and Trust Company—Savings account	1,730.18
Franklin Federal Savings and Loan Association—Savings account	18,125.73
Richmond Federal Savings and Loan Association—Savings account	25,927.32
First Federal Savings and Loan Association—Savings account	12,348.82
Security Federal Savings and Loan Association—Savings account	12,412.77
Williamsburg Savings and Loan Association—Savings account	11,539.19
Security Savings and Loan Association—Certificate of Deposit	18,058.48
First and Merchants National Bank—Certificate of Deposit	10,000.00
Total	$211,388.64

Building Fund Assets—$124,128.08

Details of the building fund assets are shown in a separate schedule. No indebtedness against these assets was disclosed by the books.

OPERATIONS

The results of operations for the fiscal year ended September 30, 1970, are shown in the statement of income and expenses prepared on the cash receipts and disbursements basis. A summary of income and expenses for the current year is compared with that of the two preceding years as follows:

	Fiscal Year Ended		
Income	1970	1969	1968
Membership dues	$182,342.35	$121,367.75	$117,354.09
Medical monthly publication	26,675.65	28,409.03	33,121.08
Other operating income	7,382.05	7,506.18	10,335.52
Totals	$216,400.05	$157,282.96	$160,810.69
Expenses	172,970.41	153,114.66	160,449.82
Income in Excess of Expenses	$ 43,429.64	$ 4,168.30	$ 360.87

BUILDING FUND ASSETS

September 30, 1970

Land and Building—At cost		
4205 Dover Road, Windsor Farms, Richmond, Virginia:		
Land		$ 22,706.58
Office building		86,161.68
Furnishings and decorations		2,205.41
Total Land and Building		$111,073.67
Office Furniture and Equipment		
Estimated insurable value at October 1, 1950		$ 5,353.11
Purchased subsequent to October 1, 1950:		
Cost during fiscal year ended September 30, 1951	$ 951.65	
Cost during fiscal year ended September 30, 1959	6,749.65	7,701.30
Total Office Furniture and Equipment		$ 13,054.41
Total Building Fund Assets		$124,128.08

IN GENERAL

The bookkeeping records were found to have been kept in a satisfactory manner.

Insurance in force at September 30, 1970, determined from policies on file, is shown below:

Fire and Extended Coverage		
Building—Windsor Farms, Richmond, Virginia—80% Coinsurance		$ 92,000.00
Office furniture and fixtures—80% Coinsurance		$ 15,000.00
Business Liability		
Bodily injury	$100,000.00	-$300,000.00
Property damage		$ 25,000.00
Medical	$ 250.00	-$ 10,000.00
Auto Liability-Nonownership		
Bodily injury	$100,000.00	-$300,000.00
Property damage		$ 25,000.00
Medical	$ 250.00	-$ 10,000.00
Employee Honesty Bonds		
Executive Secretary-Treasurer		$ 5,000.00
Secretary		$ 5,000.00
Workmen's Compensation		Standard

Woman's Auxiliary....

Annual Convention

The Forty-Eighth Annual Convention of the Woman's Auxiliary to The Medical Society of Virginia was held October 11-14, 1970, at the John Marshall Hotel in Richmond. The Richmond Auxiliary was most gracious in planning a lovely luncheon at the Virginia Museum of Fine Arts, with musicians and a tour of the new wing.

The highlight of the luncheon was the installation of our new president, Mrs. Reuben F. Simms. In her acceptance speech, Mrs. Simms placed emphasis on the responsible adult, physical fitness for the family and greater involvement in community health in 1970. She expressed the hope that when we look back on this decade it will be known as the "Significant Seventies" for many reasons: (1) important advancements toward a cure for killing diseases of the heart and cancer; (2) significant legislation to control drug usage, protect us from crime and violence, to end pollution and conserve our natural resources, and to find a better way than busing to obtain balance in the public schools; (3) significant help for the poor, not by adding to the welfare rolls, but by encouraging incentive in the able-bodied; (4) a solution for the care of the aged that they might live out their lives in quiet happiness and dignity.

Mrs. Simms concluded, "There are four things that I love best of all: my church, my family, my country and the Medical Auxiliary. I will try to be the kind of President that Virginia deserves."

A tea given by the Richmond Auxiliary in honor of Mrs. Reuben Simms was held Tuesday afternoon, October 13, at Windsor. This lovely old home in Windsor Farms was given to the City of Richmond by its former owner, Quincy Cole. It was an elegant conclusion to our annual convention.

Committee Chairmen Named

Mrs. Simms announced the following officers and Committee Chairmen to serve with the elected officers and Directors.

Appointed Officers

Chaplain—Mrs. Daniel Anderson, Norfolk

Historian—Mrs. Frank Buck, Lynchburg

Parliamentarian—Mrs. Thomas Hunnicutt, Jr., Newport News

Committee Chairmen

A.M.A.-E.R.F.—Mrs. William J. Reardon, Fairfax

Archives—Mrs. A. Broaddus Gravatt, Jr., Northern Neck

Awards—Mrs. George Kelly, Pulaski

Children and Youth—Mrs. Glen Holden, Fourth District

Community Health — Mrs. William Gordge, Roanoke

Councilor to Southern — Mrs. Harold Horden, Norfolk

Vice Councilor to Southern—Mrs. Randolph Hoge, Richmond

Editor of Newsletter—Mrs. L. C. Strong, Norton

Finance—Mrs. Robert D. Keeling, South Hill

Health Careers—Mrs. Michael Puzak, Arlington

International Health—Mrs. M. Pinson Neal, Jr., Richmond

Legislation—Mrs. Wallace Baker, Arlington

Members at Large—Mrs. Samuel P. Massie, Stuart

Membership—Mrs. David B. Hill, Lynchburg

Memorial Fund—Mrs. A. Broaddus Gravatt, Jr., Northern Neck

Mid-Centennial History—Mrs. A. Broaddus Gravatt, Jr., Northern Neck
Mental Health — Mrs. Walter Laude, Richmond
Newsletter Contributing Editor—Mrs. W. Clarke Pole, Norfolk
Circulation—Mrs. A. H. Bond, Norton
Nominating Committee — Mrs. Joseph Straughan, Wise
Philanthropic—Mrs. Ralph Landes, Danville
Program—Mrs. Harold Williams, Newport News
Publicity—Mrs. C. Leon Jennings, Jr., Roanoke
Revisions—Mrs. Frances McGovern, Danville
Safety-Disaster Preparedness — Mrs. Thomas Payne, Newport News
Walter Reed Birthplace—Mrs. Raymond Brown, Mid-Tidewater
WA-SAMA Liaison—Mrs. Richard Weymouth, Richmond
Yearbook — Mrs. Hampton R. Bates, Hampton
Ad-Hoc Committee Chairman (By-laws and Handbook revisions)—Mrs. James M. Moss, Alexandria

Special Notes

We would like to give a big "thank you" to Mrs. Joseph M. Straughan for leading our auxiliary through a very successful year.

Congratulations are extended to Dr. James M. Moss, President of The Medical Society of Virginia and to the President-Elect, Dr. William S. Hotchkiss from Norfolk.

We are very pleased that Mrs. Nash Thompson will be an officer for the Auxiliary to the Southern Medical Association and that Mrs. Daniel Anderson is a director for the Woman's Auxiliary to the American Medical Association.

The Mid-Year Board Meeting will be held March 19, 1971, at The Medical Society of Virginia, 4205 Dover Road, Richmond.

Please place AMA-ERF first on your Christmas list and send a contribution to your local chairman or to Mrs. William J. Reardon, 1508 Nelway Court, McLean, Virginia 22101.

Jane Jennings (Mrs. C. Leon, Jr.)

Minutes of Annual Meeting

The forty-eighth annual meeting of the Woman's Auxiliary to The Medical Society of Virginia convened in the Washington Room of the John Marshall Hotel, Richmond, October 12, 1970 at 9:10 A.M. with the President, Mrs. Joseph M. Straughan, presiding.

Immediately following the call to order, the Invocation was given by the Chaplain, Mrs. F. Clyde Bedsaul. It being Columbus Day, the Pledge of Allegiance to the Flag was repeated in unison, followed by the Pledge of Loyalty, led by Mrs. Harold Williams.

Mrs. Straughan introduced Dr. James M. Moss, President-Elect of The Medical Society of Virginia, who brought greetings from the Society and, in a delightful manner, pointed out our responsibilities to our husbands, children, communities and the medical profession.

A warm welcome was extended the Auxiliary by Mrs. Isadore S. Zfass, President of the Auxiliary to the Richmond Academy of Medicine. Mrs. W. L. Sager, President of the Danville-Pittsylvania Auxiliary, responded.

Mrs. Straughan presented the following honored guests: Mrs. Clare W. Johnson, Director, Woman's Auxiliary to the American Medical Asociation; Mrs. Ramsey Moore, President-Elect, Southern Medical Auxiliary; Mrs. Robert Petres, President, Sally Tompkins Chapter, Woman's Auxiliary to the Student American Medical Association; Mrs. Wilson Smith, Eastern Regional Chairman, A.M.A.E.R.F. and Mrs. Frank Peck from West Virginia.

The Past-Presidents were introduced at this time. They included Mesdames Wilson, Hunnicutt, Howard, Porter, Bedsaul, Gravatt, Moss, Thompson, Kelly and Keeling.

Mrs. Randolph Hoge, Convention Chairman, made several announcements.

The Convention Rules of Order were given by Mrs. Thomas N. Hunnicutt, Jr., Parliamentarian.

The Recording Secretary, Mrs. Donald F. Fletcher, Jr., called the roll. Twenty-six officers and committee chairmen and fourteen component auxiliary representatives responded.

Mrs. Thomas N. Hunnicutt, Jr., Chairman of the Reading Committee, reported that the minutes of the 1969 annual meeting had been read and approved as corrected.

The Treasurer, Mrs. David B. Hill, reported a balance, as of September 27, 1970, of $1,099.54 in the General Fund and $1,202.40 in the Savings Account.

In the absence of the Chairman, Mrs. Quarles read the Auditing Committee report which stated that the Treasurer's books had been examined and found to be correct.

The President recognized all of the State Officers and Committee Chairmen at this time and then introduced Mrs. Edward Lilly, Region I Vice-President, WASAMA. Mrs. Lilly brought greetings from the National organization and invited us to become sustaining members of WASAMA.

In the absence of Mrs. McGovern, Chairman, Mrs. William Gordge, Corresponding Secretary, read the proposed changes to the By-Laws which were adopted section by section as follows:

Article IV

Section 1. Change first sentence to read:

"The dues of this auxiliary shall be *eight dollars ($8.00)* (changed from six dollars, $6.00) per year, four dollars of which shall be sent to the Woman's Auxiliary of the American Medical Association as per capita dues."

Article VII Board of Directors and Executive Committee

Section 1. Insert as second sentence:

"All state past presidents shall be honorary members of the Board of Directors without voting privileges unless holding an office or chairmanship which carries a vote."

(Explanatory note: "without . . . etc." Recommended by the Board on March 20, 1970 at the Mid-Year Board Meeting.)

Article VIII Standing Committees and Their Duties

b) Insert "Health and" to read: "Community *Health and* Service."

c) Insert "Safety-" to read: "Safety-Disaster Preparedness."

Section 3. Add "Health and" to the name of the committee to read:

"The Committee on Community *Health and* Service shall . . . etc."

Section 4. Add "Safety-" to the name of the committee to read:

"The Committee on *Safety*-Disaster Preparedness (formerly Civil Defense) shall educate and encourage auxiliary members and the (*delete "lay"*) public *in general* to prepare for any local or national disaster *and promote safety projects.*"

Article X Convention

Section 3. Voting delegates.

Add e. *"All state past presidents."*

The Credentials Committee Chairman, Mrs. Thomas Overton, reported that thirteen officers, eighty-five delegates and thirty-six guests had registered.

Mrs. Robert Keeling, Finance Committee Chairman, presented the proposed budget for 1970-1971. It was adopted unanimously.

Mrs. Wallace Baker, Legislation Chairman, read and moved the adoption of a resolution in support of the revised Constitution of Virginia. The resolution which passed pending approval by the House of Delegates of The Medical Society of Virginia is as follows:

Whereas, the people of Virginia will be voting on November 3 on Constitutional amendments which have been twice approved by the General Assembly of Virginia and which will revise the Constitution of Virginia, and

Whereas, the Constitutional amendments, the first general revision of the Constitution since 1928, create a Constitution which through a general updating will tend to encourage more viable responsible government in Virginia, and which responds to important needs of the Commonwealth in such areas as education, conservation, and capital needs of hospitals and other institutions, and

Whereas, the Advisory Council of The Medical Society of Virginia to the Woman's Auxiliary has approved in writing the Auxiliary's support of the above resolution, and be it therefore

Resolved, that the Woman's Auxiliary to The Medical Society of Virginia does hereby give its warm support to the revised Constitution and does urge the people of Virginia to vote "yes" on the Constitutional amendments on November 3, and be it further

Resolved, that a copy of this resolution be mailed

to each County Auxiliary in Virginia, and to A. E. Dick Howard, Executive Director, Virginians for the Constitution.

The Convention adopted the recommendation from the Board that the Handbook be revised to include the recent changes in the By-Laws. Mrs. Straughan appointed Mrs. Moss, Chairman, Mrs. Gravatt and Mrs. Hunnicutt to a committee. The President-Elect is to name two additional members.

Mrs. Straughan presented Mrs. Ramsey Moore, President-Elect of the Auxiliary to the Southern Medical Association, who brought greetings and spoke briefly concerning the activities of that auxiliary.

The Keynote Address by Mrs. Clare W. Johnson, Director, WAAMA, recounted many accomplishments of the component auxiliaries in Virginia and felt there was a firm foundation for future growth in developing the National theme "The Responsible Adult".

Mrs. David Hill gave the report of delegates to the forty-seventh Convention of the Woman's Auxiliary to the American Medical Association held in Chicago in June.

Mrs. Straughan introduced Mrs. James Brown and Mrs. Arnold Kaplan who spoke on the exciting work of the Alexandria auxiliary in the compilation of a book on drug abuse to be used by the schools in Alexandria. Five copies and one curriculum guide were presented to the State Auxiliary for information and use by the component auxiliaries.

Mrs. Carl Stark, Historian, presented the State Scrapbook to Mrs. Straughan, who accepted for the Auxiliary. Mrs. Stark then presented the State President's Scrapbook to Mrs. Straughan. Dr. Straughan was introduced at this time.

In the absence of the Chairman, Mrs. Wallace Baker gave the report of the Nominating Committee and there being no further nominations from the floor, the following slate was elected:

President-Elect:	Mrs. David B. Hill
1st Vice-President:	Mrs. Harold Williams
2nd Vice-President:	Mrs. L. C. Strong
3rd Vice-President:	Mrs. William Reardon
Corresponding Secretary:	Mrs. Elliott Oglesby
Recording Secretary:	Mrs. Donald Fletcher
Treasurer:	Mrs. Hans Klapproth
Directors:	Mrs. Joseph Straughan
	Mrs. Robert Keeling
	Mrs. James Moss

The Courtesy Resolutions were read by Mrs. William Gordge, who moved their adoption. They were passed.

Mrs. Pinson Neal spoke briefly concerning the Doctors' Day exhibit and the Children and Youth Committee.

An impressive memorial service conducted by the Chaplain, Mrs. Clyde Bedsaul, paid tribute to the deceased members.

The President recessed the meeting at 11:35 A.M.

The Inaugural Luncheon was held in the Galleries of the Virginia Museum of Fine Arts preceded by Hospitality Time in the Renaissance Court. The Invocation was given by Mrs. Bedsaul. Among the honored guests were: Dr. and Mrs. William Grossmann, Dr. Hill, members of The Medical Society Advisory Committee, the wife of the Governor of Virginia, Mrs. Linwood Holton and the Past Presidents who were asked to stand while a telegram was read from Mrs. Daniel Anderson, who was attending a National Board meeting in Chicago.

Awards were presented by the Chairmen of the respective committees to the following auxiliaries:

A.M.A.E.R.F.—Fairfax—silver tray—largest total contribution.
Virginia Beach—greatest effort and increase over last year.
Wise—greatest per capita contribution.
Children and Youth—Alexandria
Doctors' Day—over 50 members—Norfolk—Margaret Howard silver bowl.
under 50 members—Wise—silver bowl.
Community Health and Service—Fairfax
Health Careers—Richmond
International Health—Roanoke
Mental Health—Richmond
Scrapbook—
over 75 members—Norfolk, Fairfax
under 75 members—Virginia Beach, Rockingham

Mrs. Ramsey and Mrs. Clare Johnson were introduced again and each spoke briefly. Mrs. Johnson installed the newly elected officers.

Mrs. Simms made a short acceptance speech and then received the State President's pin from Mrs. Straughan. Mrs. Keeling pinned the Past President's pin on Mrs. Straughan.

Following a few Convention announcements and acknowledgments by Mrs. Hoge, the meeting adjourned. Guests were invited to tour the East Wing of the Museum.

Virginia Fletcher, *Recording Secretary*
(Mrs. Donald F. Fletcher, Jr.)

Editorial . . . .

Salmonella Where?

THE HABIT of naming a microbiological genus after the scientist who discovered it is common practice. We honor Louis Pasteur (*Pasteurella*), David Bruce (*Brucella*), Jules Bordet (*Bordetella*), Kiyoshi Shiga (*Shigella*), Daniel Salmon (*Salmonella*), and Herald Cox (*Coxiella*) in this fashion. On occasion we go even further by adding the name of a colleague or rival to identify the species, e.g., *Coxiella burneti,* named after Sir MacFarlane Burnet, the eminent Australian rickettsiologist and virologist. Of all these names, however, that of Salmon is of greatest moment today in American, or indeed any, medical practice.

Daniel Elmer Salmon (1850-1914) was a veterinary pathologist who became the first chief of the Bureau of Animal Industry in the United States Department of Agriculture. He graduated with the degree of Bachelor of Veterinary Science at Cornell University in 1872 and practised in Newark, N. J., before becoming a research scientist. His work with another Cornell student and microbiological pioneer, Theobald Smith (1859-1934), resulted in the isolation and description of *Salmonella suipestifer,* later renamed *cholerae suis,* in 1885. It is from this momentous piece of work during the golden age of the germ theory that we derive the name salmonella. The ubiquity of this genus no doubt explains the singular custom of using place names in identifying its serotypes. This habit, although of interest to the geographer and the historian, is liable to breed confusion in the busy practitioner of medicine in Virginia. We have, for instance, *Salmonella montevideo.* Is this a reminder that salmonellae are a constant concomitant of the poultry industry in the northern Valley of Virginia, where Montevideo nestles between Harrisonburg and McGaheysville? Is *Salmonella saint-paul* a product of the coal mines of Wise County? Does *Salmonella newport* mean that the Giles County township has achieved universal recognition and is it related in some way to the *Salmonella montgomery* of its neighboring county? Did someone misspell *Salmonella urbana* and should Claytor Lake vacationers beware of *Salmonella dublin?* Not at all—none of these organisms is native to Virginia. The Commonwealth is, however, the proud patron of three salmonella serotypes—S. *harrisonburg,* S. *virginia,* and S. *richmond.* The first of these was isolated in 1953 from a turkey poult during an epidemic; the other two were obtained from human specimens. S. *virginia* was isolated by Forrest Spindle, the Virginia State Department of Health bacteriologist, from a 40-year-old female who experienced four episodes of

nausea, diarrhea, and fever lasting 12-72 hours during the months of June through October 1944. S. *richmond* was also isolated by Forrest Spindle two years later from a child with gastroenteritis.

The similarity of place names in the United Kingdom of Great Britain and Northern Ireland and the United States of America accounts for perhaps more confusion than any other two countries. As examples we have S. *derby,* S. *reading,* S. *norwich,* S. *london,* S. *cambridge,* and S. *aberdeen.* S. *derby,* pronounced "darby," was recovered from several patients of a 37 case foodborne disease outbreak in Derby, England, in 1923 with a mean incubation period of 11 hours. The source of the bacteria was a contaminated pork pie. It has nothing to do with the horse race of the same name from which the Kentucky Derby, pronounced "derby", is derived. In point of fact the Derby is not run at Derby but at Epsom Downs and its name comes from a coin tossed by Edward Smith Stanley, 12th Earl of Derby, and Sir Charles Bunbury to decide after whom the race should be named. Sir Charles' revenge was immediate, however, when his colt Diomed won the first running of the Derby on May 4, 1780. It is refreshing to contemplate that, if the coin had fallen differently, we might have a Kentucky Bunbury today and therefore no possibility of confusing Salmon's organisms with Churchill Downs. As an aside, the Earl of Derby had been accorded the honor in the previous year of naming the Epsom classic for three-year-old fillies after his shooting-box, "The Oaks", winning the first race with a horse from his own stable. This filly, Bridget, was sired by Herod, the great stallion descended from the Byerley Turk, which, with the Darley Arabian and the Godolphin Arabian or Barb, is the direct ancestor of all thoroughbred horses in the world. Herod's stud fee is said to have varied from £10 to £25 and "his stock won over £200,000, 40 hogsheads of claret, 3 Cups and the Whip." [1] These races, the Derby and the Oaks, together with the One Thousand and the Two Thousand Guineas of Newmarket, and the Saint Leger of Doncaster, make up the five classic rates in England. The Two Thousand Guineas, the Derby, and the St. Leger constitute the Triple Crown and correspond to the Kentucky Derby, the Preakness, and the Belmont in this country. As a further aside, the 187th renewal of the Derby Stakes in 1970 was won by a Russian named horse "Nijinsky" which was owned by an American, bred in Canada, trained in Ireland, and ridden by an English jockey. The race, at least for this year, managed to approach the international character of the salmonella.

No doubt in the days of the 12th Earl and Sir Charles, we should have been concerned with salmonellosis in horses. Today, the infrequent contact with horses in the age of the automobile and jet plane has virtually

eliminated equine sources of salmonellae in the United States; not so with other domestic animals, however, who constantly endanger our environment with these organisms. In recent years poultry have accounted for 30%, and swine and cattle for another 15%, of all non-human salmonella isolations. A further alarming 23% comes from animal feeds, probably the greatest conveyer of salmonellae across international boundaries. There is also a remarkable similarity between the serotypes isolated from human and animal sources—the five serotypes of S. *typhimurium*, S. *heidelberg*, S. *thompson*, S. *saint-paul*, and S. *infantis* were among the "top ten" in both human and animal populations in 1969.

All in all, then, it doesn't matter where the "chester" of S. *chester* comes from except for chauvinistic reasons. What does matter is that we are faced with some 900 serotypes of D. E. Salmon's bacillus which are in constant circulation in animals and humans, and in their respective foods. To contain this threat we need medical awareness, the intelligent use of public health laboratories and services, and, most of all for individual purposes, impeccable hygiene in the kitchen, whether commercial or private. We must remember that salmonellae are everywhere or that, as a writer in the *Lancet* more poetically remarked,

> "An infection in beavers was transmitted to retrievers,
> And carelessly contracted by a vet.,
> While an organism injected in a toad in Timbuctoo,
> Was recovered from a tadpole in Tibet." [2]

F. J. Spencer, M.D.

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1. Craig, D.: Horse-Racing. Harmondsworth, Middlesex, Penguin Books, 1949.
2. Quoted in Bigland, C.H.: Salmonella Reservoirs in Alberta. Canadian J. Public Health 53, 97-103, 1962.

The 8th Evac

A HISTORY of the University of Virginia Hospital Unit in W W II by Byrd Stuart Leavell, Professor of Internal Medicine at the University, has just appeared. A definitive story of the participation of the 8th Evacuation Hospital has been long awaited but this excellent account has been well worth the delay. Dr. Leavell was designated historian of the unit shortly after its formation. This permitted him to prepare a day-to-day journal that covered virtually the entire period of the hospital's existence. The author's convalescence, following an illness in 1967, gave him adequate time to assemble and edit his data and the additional material he obtained from many other sources. We are reminded by Dr. Leavell that the activities of Base Hospital No. 41, which represented

the University in 1917-18, have never been recorded. We do not wish Byrd to have any further ailments to serve as a stimulus for another medico-military epic but there is no one else on the horizon to save the 41st before it fades into the past.

The question of an affiliated medical unit sponsored by the University was not resolved immediately following Pearl Harbor due to a lack of enthusiasm on the part of senior members of the faculty. As is usually the case, a member of the teaching staff who had previous wartime service was needed to bring an otherwise reluctant faculty to a realization of the role that an institution should play in such world-shaking times. The catalyst, fortunately, was present in the person of the late Staige Davis Blackford, an associate professor of medicine, who deserves the major credit in bringing together a team of outstanding physicians, nurses and corpsmen capable of staffing a 750-bed hospital. This was a major task as the then small faculty at the University necessitated the recruiting of many former medical graduates and house officers to meet the required 35 physicians needed in an affiliated evacuation unit. Dr. Blackford was a member of the "famous Class of '25" which had been alluded to on previous occasions in these columns. Fortunately he was ably assisted by Dr. E. Cato Drash who became Chief of Surgery and Miss Ruth Beery who assembled 50 nurses most of whom were graduates of the University School of Nursing. Dr. Leavell, in writing of his chief of medicine, stated: "Staige gave the unit a style and tone that few Army hospitals had" and appropriately dedicated this book to Dr. Blackford whose death on July 17, 1949, brought a brilliant career to an untimely end.

The 8th Evac was activated on July 1, 1942, and on November 19 arrived at Casablanca. The 8th and the 11th Evacuation units were the earliest American hospitals to reach Morocco but the 8th had the distinction of being in operation first when on November 21 its initial patient—with the appropriate name of Pvt. Adam—was received. We do not know the name of the last soldier but a total of 48,046 more were admitted during the next three years of operation and 45,000 were treated as outpatients. Various other "firsts" were established during this period. The 8th Evac was the first medical unit affiliated with a teaching institution to land on European soil. Another, less desirable distinction, was had when the SS *William Gerhard* was torpedoed off the coast of Italy carrying all of the unit's equipment and much of the members' personal belongings to the bottom of the sea.

During the bitter winter of 1944-45 the 8th Evac was the most forward hospital during the stalemate in the Apennines but it had the satisfaction of being the first to cross the Po River when the weather opened the fol-

lowing spring. The cessation of hostilities which soon followed did not bring all surgery to a halt, for it was recorded in the month of May that no less than 73 American GIs were admitted with injuries incurred from tampering with captured souvenirs they had picked up after the surrender. When the unit was inactivated in Leghorn on September 30, the members learned that the 8th Evac had served in North Africa and Italy longer than any other American hospital.

General Mark W. Clark, in a foreword, wrote in part: "Aside from profound morale implications, the 8th Evacuation Hospital functioned in a way that had particular salutary effects on the battlefield situations in areas which it supported. . . . It was the professional competence and dedication of individuals such as those who manned the 8th Evacuation Hospital who were responsible for the magnificent performance of the 5th Army throughout the Italian Campaign."

Dr. Leavell's narrative is an excellent one that will fill in many gaps which otherwise would have gone unrecorded. His daily accounts of happenings and the many conversations he relates in almost Hemingway style give a lasting insight into the thoughts that passed through the minds of the participants during the many hours of boredom that far outnumbered the periods of backbreaking activity. This is the material that historians seek. The author was an interested observer of all that transpired and he duly recorded the humorous as well as the grim happenings in a military hospital. He recalled the distraught priest whose tiny chapel was commandeered on weekdays by the unit psychiatrist who carried out his seances on the left side of the altar, while on the opposite side postmortem examinations were made on a makeshift autopsy table with faulty plumbing.

This narrative follows an even, professional style that is a tribute to a gifted physician who is equally at home as an author. The phrases are not pedestrian and there are no drab passages. This book should prove readable to many who are not primarily interested in medical or military matters. The reviewer also found a nostalgic quality that should appeal to those who may recall the university when the student body, the faculty and the administration were more homogeneous and more aware of their primary purpose at a center of learning. The charge of provincialism was often made, and doubtless was true to a degree, but in retrospect it carried with it fringe benefits of mutual respect, noblesse oblige and in time of need, patriotism—all virtues which are not invariably present today.

H. J. W.

By Byrd Stuart Leavell, Dietz Press, Richmond, 1970. 260 pp. $7.50. ($8.00 if mailed)

News . . . .

Calendar of Events

Annual Medical Seminar—Sponsored by Continuing Education Program of University of Virginia School of Medicine—The Homestead—Hot Springs—February 17, 18, 19, 1971.

American College of Physicians, Virginia Section—The Homestead—Hot Springs—February 20, 1971.

Alton D. Brashear Post Graduate Course in Head and Neck Anatomy—Department of Continuing Education—Medical College of Virginia—Richmond—February 22-25, 1971.

Thursday Afternoon Lectures—Spring Series—Sponsored by University of Virginia School of Medicine—Charlottesville—March 4-April 29, 1971.

Student Cancer Day—Sponsored by Continuing Education Program of University of Virginia School of Medicine—Charlottesville—March 5, 1971.

Virginia Academy of General Practice—Annual Assembly—The Homestead—Hot Springs—March 10-14, 1971.

Post Graduate Course in Radiology—Department of Continuing Education—Medical College of Virginia—Williamsburg—March 14-18, 1971.

Roanoke Memorial Hospital Post Graduate Program—Roanoke—March 18-19, 1971.

Emily Gardner Lectureship (Pediatrics)—Department of Continuing Education—Medical College of Virginia—Richmond—March 19, 1971.

National Conference on Rural Health—Sponsored by American Medical Association—Marriott Motor Hotel—Atlanta, Georgia—March 25-26, 1971.

Electrocardiography and Vectorcardiograph Course—Sponsored by Continuing Education Program of University of Virginia School of Medicine—Charlottesville—March 25-27, 1971.

Swineford Allergy Conference—Sponsored by the Continuing Education Program of University of Virginia School of Medicine—Charlottesville—April 2, 1971.

Cardiac Pacing—Post Graduate Course sponsored by American College of Cardiology and Medical College of Virginia—Williamsburg—April 16-17, 1971.

Intensive Respiratory Care—Workshop for Physicians—Sponsored by Continuing Education Program of University of Virginia School of Medicine—Charlottesville—May 13-15, 1971.

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The Medical Society of Virginia maintains a registry of medical meetings and programs of interest to Virginia physicians. You can help by keeping us advised of any meetings scheduled in your area. This will not only help others avoid conflicts but also provide helpful information on opportunities for continuing education.

New Members.

The following members were accepted into The Medical Society of Virginia during the month of October:

Jude Edmund Aidoo, M.D., Portsmouth
Albert James Bazo, M.D., Alexandria
Delano Woodrow Bolter, M.D., Radford
Robert Johnson Bosley, M.D., Virginia Beach
Roberto L. Datoc, M.D., Alexandria
John Russell Eagle, M.D., Harrisonburg
Robert Vernon Gailliot, M.D., Marion
Joel Lester Koslow, M.D., Alexandria
James Carter Laidlaw, M.D., Winchester
John Lewis, M.D., Alexandria
Michael David Lieberman, M.D., Alexandria
George Francis Miller, Jr., M.D., Alexandria
Hernando Salcedo, M.D., Alexandria
Samuel Ray Sawmiller, M.D., Alexandria
Carl Robert Showalter, M.D., Harrisonburg
James Dean Sprinkle, M.D., Danville
John Anthony Wente, Jr., M.D., Bedford
Andrew Lee Williams, M.D., Marion
Ellis Nathaniel Zuckerman, M.D., Petersburg

The Medical Society of Virginia.

The 150th Anniversay meeting of the Society was held at the John Marshall Hotel, Richmond, October 11-14. There was a total registration of 849, including 536 physicians, 59 students, 21 guests (non medical), 99 exhibitors, and 134 ladies.

Dr. James M. Moss, Alexandria, succeeded Dr. William Grossmann, Franklin, to the presidency. Dr. William S. Hotchkiss was named president-elect, and Drs. W. D. Liddle, Jr., Fredericksburg, Harold I. Nemuth, Richmond, and Anthony J. Munoz, Farmville, vice-presidents.

A full report of the Council and House of Delegates is given in this issue of the Monthly, beginning on page 777.

Northern Neck Medical Association.

Dr. Robert Beatley, Reedville, was installed as president of this Association at its meeting at Tides Inn on October 22. He succeeds Dr. M. B. Lamberth, Jr., Kilmarnock. Dr. A. B. Gravatt, Jr., Kilmarnock, was named president-elect; Dr. Harvey Goode, Kilmarnock, was re-elected vice-president, and Dr. Norman R. Tingle, Lively, secretary-treasurer.

The scientific part of the program was a panel on Aspects of Legal Medicine. Participants were Dr. Geoffrey Mann, Chief Medical Examiner of Virginia, Richmond, and Mr. Jack Russell, an attorney also from Richmond. Dr. David Paul, Her Majesty's Coroner, City of London, England, participated in the panel and also presented a paper on The Abortion Act of 1967 in England.

Dr. Thomas H. Hunter,

Vice-president for medical affairs at the University of Virginia, will retire from administrative duties and return to full-time teaching and research next July. He joined the University in 1953 as dean of the School of Medicine and professor of medicine, and became chancellor for medical affairs in 1965 which position he held until his present position was created in 1970.

Blue Cross and Blue Shield of Virginia.

Mr. Alden E. Flory, Richmond, has been named president and chief executive officer of Blue Cross and Blue Shield of Virginia. He succeeds Robert C. Denzler who resigned on June 5. Mr. Flory has been acting chief executive since that time.

Dr. John Wyatt Davis, Jr.,

Lynchburg, presented a lecture on October 7th at the Lynchburg General Hospital in cooperation with the Department of Chaplains. He presented a background of medicine from 5000 BC showing the rela-

tionship between priest and physicians, the mythology of medicine and epilepsy and how there evolved the present concept of medicine and religion as outlined by the American Medical Association and their Code of Ethics. He showed the AMA film "Storm and Strife". On October 20th, he made a similar presentation with the showing of the film "The One Who Heals".

Promotions at University of Virginia.

Six members of the University of Virginia School of Medicine faculty have been promoted to the rank of professor. They include Dr. Robert R. Cardell, Jr., in anatomy; Dr. Ying-Tang Hsu, pathology; Dr. Marion K. Humphries, Jr., ophthalmology; Dr. Julian I. Kitay, internal medicine and physiology; Dr. John A. Owen, Jr., internal medicine, and Dr. Peyton E. Weary, dermatology.

Rehabilitation Awards.

At the meeting of the Virginia Rehabilitation Association in Abingdon in October, Dr. A. Ray Dawson, Richmond, received the 1970 R. N. Anderson Award for "his substantial and outstanding contribution to the disabled of Virginia, particularly the patients in the state mental hospitals." He also received a national award from the Rehabilitation Services Administration of the U. S. Department of HEW. Dr. J. Treacy O'Hanlan, Waynesboro, received the Roy M. Hoover Award. This award, presented for the first time, was given to honor a physician practicing in Virginia who has contributed to the rehabilitation of disabled citizens.

Pediatric Society.

The Virginia Chapter of the American Academy of Pediatrics and the Virginia Pediatric Society will hold its annual meeting in Williamsburg, February 26-27, 1971. Participants in the program will be Dr. Samuel L. Katz, Jacqueline A. Noonan, Melvin Museles, Elsa P. Paulsen, Ronald Davis and Charles S. Sale. The banquet speaker will be Guy Friddell, editor of the Norfolk Virginian Pilot.

For further information, contact Dr. William P. Spencer, secretary, Medical College of Virginia, Richmond.

American Cancer Society, Virginia Division.

At the annual meeting of this Society, held in Richmond, October 21-22, Dr. Lloyd B. Burk, Arlington, was elected president. Dr. J. Shelton Horsley, III, Charlottesville, was elected medical vice-president.

Physicians Wanted.

Full time emergency room coverage in active emergency room of 191-bed, accredited hospital, in the beautiful Shenandoah Valley of Virginia. Guaranteed annual income. Contact Administrator, King's Daughters' Hospital, Staunton, Virginia 22401. (*Adv.*)

Physician Wanted.

State employment in Institutional setting, Virginia license required, salary negotiable, vicinity of Richmond, Virginia, State benefits. Submit summary of background or call Richmond 770-2466, collect. (*Adv.*)

Obituary . . . .

Dr. Joseph Edward Pisano,

Lynchburg, died September 23 after a long illness. He was sixty-five years of age and graduated from the Kansas City University College of Physicians and Surgeons in 1942. Dr. Pisano had been a member of The Medical Society of Virginia for twenty-three years.

His wife, a son and a daughter survive him.

On September 23, 1970, Almighty God in His infinite wisdom saw fit to remove from our midst our beloved, esteemed and respected Dr. Joe as he was known to his friends, patients and colleagues.

Dr. Pisano was born October 1, 1904, in Brooklyn, New York. He graduated from The Kansas City School of Medicine in 1942 and entered the Lynchburg General Hospital as an intern. He served his residency there until 1945. During his three years at Lynchburg General he covered all of the services, including the Emergency Room. Every member of the Staff benefited by his abilities, his genial attitude and his untiring stamina and desire to serve God and assist all mankind whenever and wherever he was needed. This philosophy endeared him to all of us who had the privilege of knowing him.

In 1946 he passed The Virginia State Board of Medical Examiners and became a member of the Lynchburg Academy of Medicine in 1947, and entered the private practice of medicine in Lynchburg and the surrounding counties. There he was truly a Family Physician of the times, doing home deliveries with the aid of extension lights from the battery of his automobile.

His medical membership included The Medical Society of Virginia, the American Medical Association and the American Academy of General Practice.

WHEREAS: In his passing, the community and the medical profession have suffered a great and irreparable loss, and

WHEREAS: He will be missed by his friends, patients and colleagues, we are grateful to God for his having been with us and also the consolation that he is free from the prolonged suffering that preceded his death, therefore,

BE IT RESOLVED: That a copy of the Resolution be made a permanent part of the minutes of the Lynchburg Academy of Medicine, and

BE IT FURTHER RESOLVED: That copies be sent to his family and The Medical Society of Virginia.

JOHN WYATT DAVIS, JR., M.D., *Chairman*
KENNETH COOPER, M.D.
W. D. RICHARDS
Medicine and Religion Committee
Lynchburg Academy of Medicine

Dr. Barker

Born in Ringgold, Pittsylvania County, February 16, 1903, he was educated in public schools of Texas, Virginia and North Carolina and completed premedical studies at Furman University. He graduated from the University of Virginia School of Medicine in 1929 where he was a member of The Raven Society, Alpha Omega Alpha, and Phi Beta Pi.

Internship and radiology residency at University of Virginia School of Medicine. Certified by American Board of Radiology. Fellowship in American College of Radiology.

Practiced radiology in Petersburg, 1933-1939. Joined the staff at Lewis-Gale Hospital in Roanoke, in 1939, functioning as chief of the department of radiology until his death.

In U. S. Army during World War II, he was chief radiologist at Fletcher General Hospital, Cambridge, Ohio, and on the staff of the 315th Hospital in the Philippines. He attained the rank of Lieutenant Colonel.

President, Roanoke Academy of Medicine; member of the House of Delegates of the American Medical Association; President, Virginia Radiologic Society; President, The Medical Society of Virginia; Chief of Staff, Lewis-Gale Hospital, Roanoke; member, Board of Trustees of Community Hospital of Roanoke Valley; Chairman of the Board of Health, City of Roanoke. He also held membership in the Southern Medical Association, American Roentgen Ray Society, Radiological Society of North America.

He died in coronary care unit of Lewis-Gale Hospital on September 30, 1970.

Allen Barker loved his work and kept himself well informed on all aspects of his field—not because he felt driven to this, but out of sheer delight in gaining new knowledge and keeping abreast. He made it his business to know his specialty all the way down to and including the basic fundamentals. Nothing delighted him more than to tackle some of the maintenance problems on his x-ray equipment. He loved good machinery and was a true "tinkerer", especially enjoying working on electrical equipment, indicating once that he thought he would have liked electrical engineering, had he not chosen radiology.

He carried out his work with unbounded energy, unfeigned enthusiasm, and a capacity for work which never ceased to amaze those privileged to work with him. One of the chief attributes that allowed him to turn out such prodigious volume of work without sacrificing quality was his great decisiveness. He nearly always seemed to know almost intuitively the right answer or the right course and one marveled at this coveted ability to arrive so rapidly at a proper conclusion. He took an uncluttered approach, went quickly to the heart of the matter, robbing the problem of its complexity, and refusing to be led off on unrewarding tangents.

Allen was a man in command of himself. He conducted himself with equal grace and facility whether in day-to-day interpersonal relationships, at small gatherings, large parties, on the golf course, or presiding over an August medical body. He had the natural touch. He was a keen medical administrator attentive to the changing medical social conditions. He felt deeply his responsibilities to his community, his State and his nation. Possessed of a fine intellect combined with a high sense of duty, he gave himself unsparingly to the many people and institutions with which he was associated.

Allen Barker exemplified in the highest sense the ideal physician. To him, the patient always came first and he tried always to provide the best professional service and advice possible. There was no place in his mind for half-way or evasive measures either with his patients, his colleagues, or his profession. His continuing interest in the politics of medicine was guided by the same integrity, and the years that he helped guide the destiny of the Roanoke Academy of Medicine, The Medical Society of Virginia, and his tenure in the House of Delegates of the AMA all reflected his devotion to the rights and responsibilities of the individual practicing physician.

What was unique about Allen was that in gaining our respect, he also won our love. Instinctively and profoundly one trusted Allen. He possessed a compassion for human frailties and an ability to get along with others to a high degree. He touched the hearts and stirred the finest feelings in those with whom he came in contact. He had a facility for bringing forth the best at a time when it was most needed. He possessed humility, kindliness, courage, and congenial humor. He was a staunch friend. Loyalty was one of his hallmarks.

Even in the time of his illness, he believed the proper function of man was to live, not to exist. He was a disciple of the one who said, "I shall not waste my days in trying to prolong them. I shall use my time."

If one were to attempt to characterize the guiding spirit of Allen Barker we know of no better way to do it than to turn to the words of another, which he himself found occasion to quote: "Because of our beliefs we perform deeds, out of our deeds we form habits, from our habits grow our character, and on our character we build our destination." Allen's life was his message.

We already sorely miss him. His death has deprived us of a warm and wonderful friend, but in the future Allen will, in some measure, still be a part of us and remembrance of him will always sound the call of courage to principle whenever the freedom and dignity of the practice of medicine stands in danger.

Now therefore be it resolved that this memorial expression of our feelings be inscribed in the minutes of the Roanoke Academy of Medicine, published in the Virginia Medical Monthly, and a copy be delivered to his family.

C. T. Burton, M.D.
Alexander McCausland, M.D.
Carl M. Russell, M.D.
Harry B. Stone, Jr., M.D.

Dr. Davis.

Paul Davis, M.D., died on June 19, 1970, at the end of a career which exemplified the finest attributes of a physician and citizen. He was born in 1893, the son of a physician whose family was to become widely known and admired for the number of physicians it would give to the world. His four brothers, a daughter, a son-in-law, and three nephews became physicians.

Dr. Davis was educated in Roanoke and at the Medical College of Virginia where he graduated at the age of twenty-one. After graduation, he started practice in Roanoke in 1916, but World War I took him to France where his service was so exemplary that he was decorated with the French Medal of Honor.

At the end of the war, he returned to Roanoke to become affiliated with Lewis-Gale Hospital where he was to establish an enviable record as a physician, citizen, and administrator. He served for many years as President of its Board and later Secretary-Treasurer. He was an active and energetic member of several medical societies and civic organizations. He was a devoted member of Calvary Baptist Church where he served as Deacon for many years and later received a rare honor for a layman by being named Honorary Deacon. He was a Mason and a faithful member of Lakeland Masonic Lodge.

It can be truly said that Dr. Davis had the ability to combine science, compassion and spiritual values in the care of his patients. As one of his friends so aptly stated, "He had the wisdom to see beyond the physical illnesses of his patients into their troubled hearts and then devote the time and patience to counsel with them."

Nothing we write can so adequately portray the splendid character and vision of this man as two paragraphs taken from his Presidential Address to the Roanoke Academy of Medicine on November 2, 1942.

"Physicians, whether they wish it or not, hold an outstanding position in every community. They are given credit with having logical and analytical minds. More than they themselves realize they often want and need more than physical relief. Few doubt that victory at arms eventually will be ours. A great many fear it will be won at too great a cost in those things we hold most dear. It is our duty as citizens to sit at the consultation table on lay problems and if we cannot alleviate the fears with which we are confronted, at least to be in a position to lend some constructive thought and advice . . . ."

"A world revolution is at hand. A new social order is being born. There can be no question that some of the things we cherish will be lost forever. Many can be lost if physicians fail to lift their heads from the sands of purely professional matters and think they are doing their whole duty when they attempt to heal only bodies when the spirit is broken".

To epitomize the attributes of this fine physician we quote from a eulogy delivered by The Reverend Harry E. Chase of New Jersey during the funeral service of one of his close friends.

"Let us be thankful for a man who loved life and lived it to the end; for a man who loved truth and sought to know it; for a man who loved his family and wanted them to know it; for a man who loved God and was glad to be an artisan in the workshop of God".

Dr. Davis is survived by his wife and three daughters.

Your committee requests that this memorial be made a part of the permanent records of this Academy, that a copy be forwarded to The Medical Society of Virginia for publication in the Vir-Medical Monthly, and that a copy be sent to his family with an expression of sympathy from this Academy.

W. L. Sibley, M.D.
W. R. Whitman, Jr., M.D.
G. G. Gooch III, M.D.

Dr. Carmichael.

Gordon Gayton Carmichael was born February 5, 1910, in Indiana and died May 27, 1970. He was a graduate of Indiana State College and received his Medical degree from Duke University in 1939. He served his surgical residency at the Medical College of Virginia. During World War II, he served in the United States Army.

After practicing a short time in Covington, Dr. Carmichael came to Roanoke and practiced here until his death.

Dr. Carmichael is survived by his wife, three sons and a daughter.

Whereas, Doctor Carmichael served his patients with skill and gentle understanding; and

Whereas, Doctor Carmichael contributed much to the hospitals of his choice, as well as his medical societies: and

Whereas, Doctor Carmichael will be greatly missed by his colleagues, patients, and the community at large: Now therefore be it

Resolved, that the Roanoke Academy of Medicine express their grief and deep sense of loss by the death of Doctor Carmichael; and be it further

Resolved, that copies of these resolutions be sent to the family as an expression of sympathy, and that copies be sent to The Medical Society of Virginia and the medical staff of the Roanoke Memorial Hospital.

John O. Boyd, Jr., M.D.
T. Allen Kirk, Jr., M.D.
Walter S. Johnson, M.D., *Chairman*

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The Medical Society of Virginia

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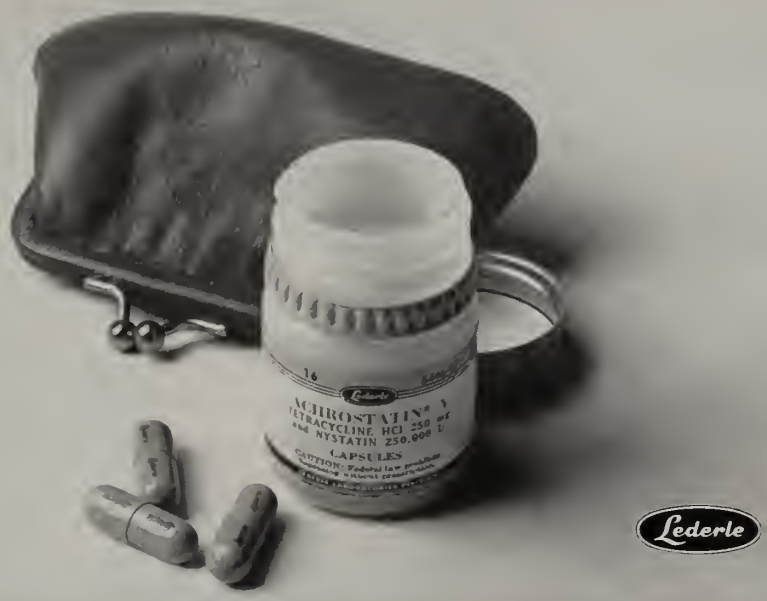
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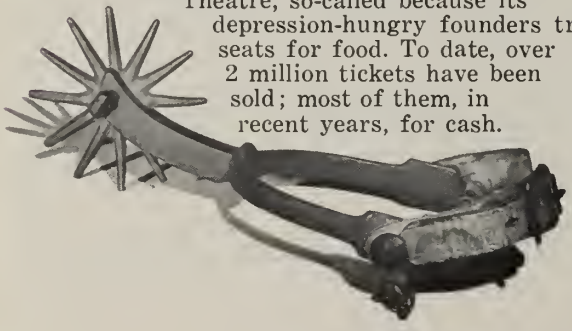
The General's Assembly. Douglas MacArthur called Norfolk home, though he was born in Arkansas ("while his parents were away", the Norfolk paper said). Here, at the MacArthur Memorial, you can see the possessions of this great soldier.



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